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Auto Routing and Auto Delete Two Options Absence Can Stop PACS Work: a Review

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Abstract: Picture Archiving and Communication System (PACS) is a wide world used digital method of diagnostic imaging. PACS servers usually have a limited capacity storage which will be sooner or later be full and no more cases to be sent. Sending of cases may be not automatic in all PACS and depending on human factor. This review is discussing two important options (Auto routing i.e. auto send of cases to PACS and auto delete of cases) for continuous sending and storage volume availability. Both when unavailable in PACS system it usually will not work properly or even may be stopped.

Keywords: PACS, teleradiology, Auto delete, Auto routing.

1 Introduction

Diagnostic imaging by its nature is connected to the Internet and is at the forefront of technology in medicine. The past few years have seen a dramatic increase in Internet-based technology in the field of healthcare, with imaging as a core application [1].

Picture archiving and communication system (PACS) is a computerized system of replacing the system of conventional radiological film: images are acquired, stored, transmitted, and displayed digitally leading to filmless clinical environment results [2].

The greatest role of PACS & Teleradiology is saving lives. Cloud-based workstations and mobile applications allow radiologists and physicians to access diagnoses, reports, and images no matter their location via PACS [3].

The availability of a teleradiology system is for all the time (24/7/365) which actually improves the patient care. PACS & Teleradiology replaced the need for patients to travel to seek for a radiology expert diagnosis and opinion [4].

PACS storage may be depending on central server of limited capacity present in the department or hospital or depending on expandable cloud storage which is the more expensive choice usually [5].

This review is discussing two important options (Auto routing i.e. auto send of cases to PACS and auto delete of cases) for continuous sending and storage volume availability. Both when unavailable in PACS system it usually will not work properly or even may be stopped.

2 Main text

PACS "work space version 5.0.0.1496" **(Millensys company, Egypt)**, was installed in Radiology department, Sohag university hospital at October 2015, from this date and till now more than 80.000 case were sent on it all over this duration from different connected modalities (CR, CT & MRI) this number of scans fill the total capacity of our PACS storage (hard disk capacity 6 TB).

The volume of each case study is depending on the number of images or scans. Cases volume may be from on image scan (as CR cases) up to more than 3000 images of CT angiography cases. This edition of PACS is lack of the two options auto routing of scans from different modalities and auto delete. Sending of cases regularly is depending on technicians.
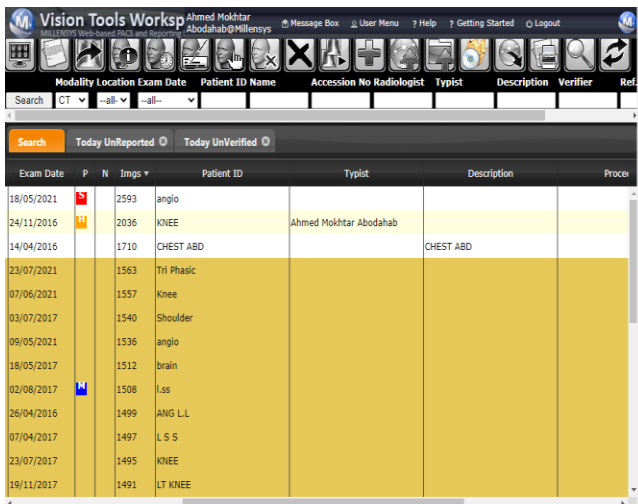
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If the technician forget or ignore to send the case this will delay or even stop the role of PACS of this modality and this may threats the unsent emergency cases.

Auto delete is an important option for the proper work of PACS on the long run. It must be controlled and not general exposing any case on the storage to be deleted. Our PACS system working nowadays is interrupted or even stopped in some times due to full storage, this need repeated manual delete of some cases to evacuate a suitable storage volume for receiving more cases. The delete option is available only for the admin of PACS system, it is done manually and single case is deleted in every step which is a time and effort consuming process.

Large volume cases such as angiography may be composed of more than 3.000 images, thus one case can consume the evacuated volume of about 100 case of small volume scan asCR or CT brain, and the problem of stop sending cases will be frequently repeated.

The auto delete options must be under control of PACS admin such like auto-delete of cases marked as low priority non reported cases. Auto delete duration also must be changeable to avoid deleting of recent cases that may have certain value in a next time. Auto delete will be an equilibrium process for auto routing option, which will fill the storage capacity more rapid than depending on human selecting case sending. Pack up of the deleted cases on outer storage may be other solution for keeping all cases of the department for any diagnostic, scientific, judicial, learning or research purposes.

Figure 1. Explain the different priority levels (Superior, High & Medium) and different number of images of different case according to type of scan.

3 Conclusions

Auto routing and auto delete of cases on any PACS are important options and their availability will keep the proper work of this PACS with no need for repeated contact with vendor or maintenance Services. These options must be in mind when choosing PACS and vendors must try to update their systems by adding these options which will decrease some load on their maintenance teams.

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