Comparison of Computed Radiography and Digital Radiography

• Digital radiography devices have more efficient detectors, offering direct energy conversion of x-ray for immediate readout.

• These detectors have all the benefits of digital or filmless imaging. But cost is still high because detector production is difficult and expensive,

• DR is a one room- at-a-time detector. DR may be cost-effective in high-volume sites and for imaging examinations requiring higher spatial resolution, such as upright chest exams and bone work.

PACS Core

- Once the images have been acquired, they need to be managed appropriately to ensure that storage, retrieval, and delivery all occur without error.

- The PACS should also guarantee that the images are stored using long term methods that meet the minimum legal obligations for the retention of images for the given state.

- They need to be delivered for interpretation in a timely manner. These requirements are satisfied by the PACS core.

The PACS core consists of the following:

1. Database manager (e.g., Oracle, MS-SQL, Sybase)

2. Image archive (e.g., RAID, Jukebox)

3. Workflow/control software (image manager)

4. RIS interface

Interpretation Workstations

• The workstation is where the physician and clinician see the results of the capture of the relevant exam information within the RIS and the images acquired and stored within the PACS.
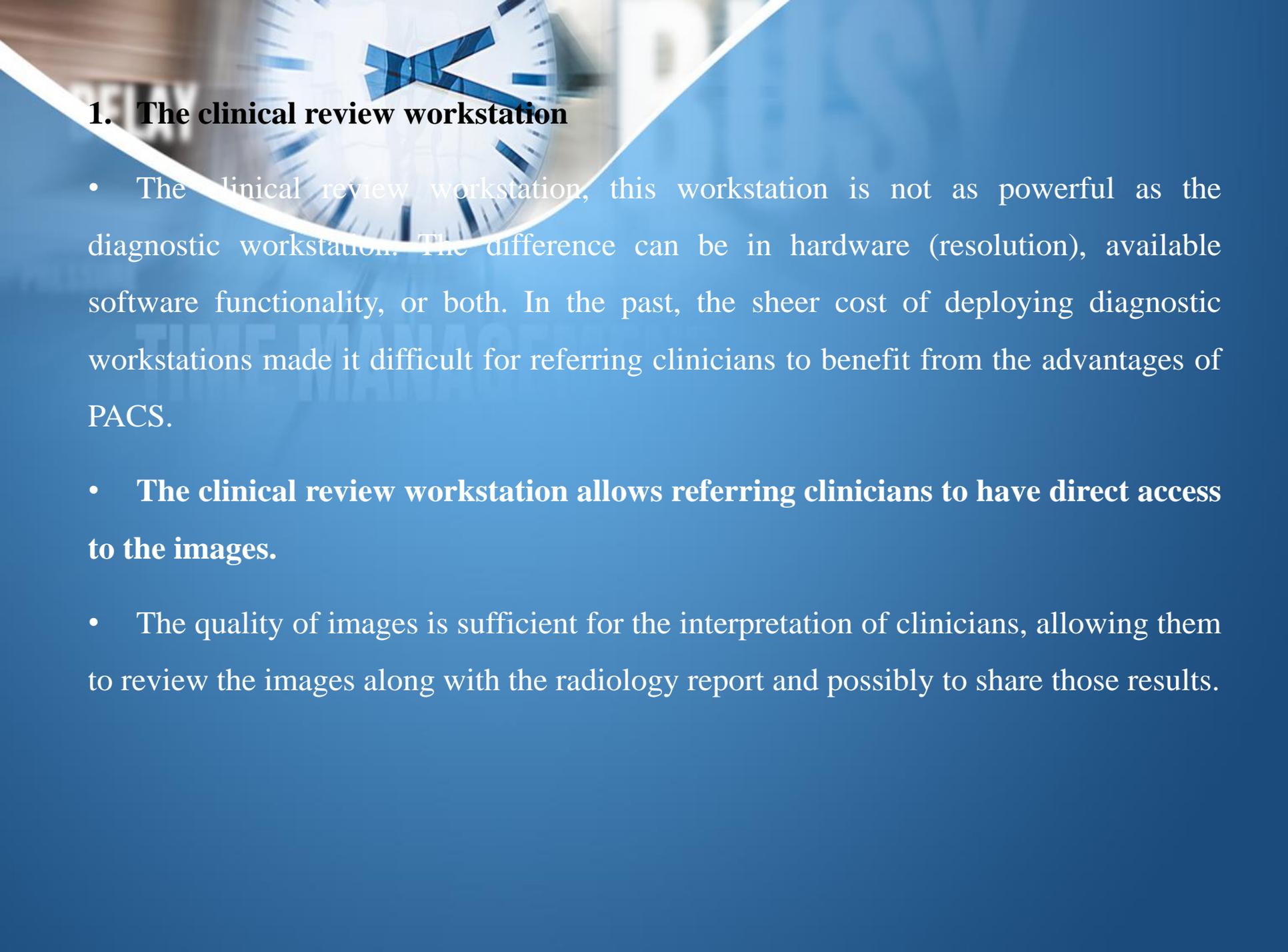
There are two general classifications of workstations:

• The distinguishing characteristics between them are resolution and functionality.

1. Diagnostic workstation

• The diagnostic workstation is the type that is used by the radiologist to perform primary interpretation of the exam. These workstations are the highest in resolution and brightness and contain the highest level of functionality.

1. The clinical review workstation

- The clinical review workstation, this workstation is not as powerful as the diagnostic workstation. The difference can be in hardware (resolution), available software functionality, or both. In the past, the sheer cost of deploying diagnostic workstations made it difficult for referring clinicians to benefit from the advantages of PACS.

- **The clinical review workstation allows referring clinicians to have direct access to the images.**

- The quality of images is sufficient for the interpretation of clinicians, allowing them to review the images along with the radiology report and possibly to share those results.