clearly observable. The universities have abundant numbers of erudite and competent researchers but not enough tagged or labeled data are available for high impact publications. Medical doctors in Iran are mainly practitioners. Although research has gained momentum within the last few years, mainstream respected researchers in medicine do not put research in their first priority. Structured reporting, if performed properly, can provide the main feed for quality research since while medical practitioners perform their regular medical practice. Their diagnosis and observations can be used directly as input to data mining and machine learning algorithms and at the same time be used for population studies.

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## Referral Guidelines in Radiology: Point of Care Advice

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### Abstract

Background: Referral guidelines are becoming more and more appreciated in health management primarily to optimize resource utilization. But in the case of medical imaging, the wise selection of the most appropriate study is also important from the patient's safety perspective. However, the problem is not limited to the availability of guidelines. Even when they are already developed and published, their practical use should be feasible to improve health care. IT tools are important to bring the guidelines to the point of care and tailor the decision to the patient's problem.

Objectives: By listening to this lecture, the audience is expected to:

1. Explain available imaging referral guidelines.
2. Describe the features of IT-based decision support tools.
3. List the process of using BARTAR application as a national imaging referral guideline platform.

Outline: The most comprehensive repository of imaging referral guidelines is the appropriateness criteria developed by the American College of Radiology. There are other national or multinational collections of guidelines but no one is practical. There are IT tools to help practitioners select the best imaging procedure according to the guidelines and considering patient's problems, including ACR Select and iGuide.

Every national health system requires an adapted version of the guidelines considering available modalities and the health system. By developing an Iranian collection of imaging referral guidelines, a Persian mobile application is designed to interactively advise medical practitioners by answering questions related to the clinical problem of the case and considering available imaging services in the institution or the region of practice, leading to a list of potential choices in order of appropriateness.

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## Experience of Enterprise Imaging in Iran

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### Abstract

Background: The use of digital imaging has substantially grown in recent decades in traditional services, new specialties, and departments. The need to share these data among departments and caregivers necessitates central archiving systems to communicate with various viewing applications and electronic medical records. This has promoted the development of modern vendor-neutral archive (VNA) systems. The need to aggregate and share imaging data from various departments has promoted the development of enterprise-imaging (EI) solutions that replace departmental silos of data with central healthcare enterprise databases. The term "enterprise imaging" is relatively new and continues to evolve. Currently, enterprise imaging usually means collecting all patients' data, including images and reports, into one place. There are lots of research demonstrating that image exchange can reduce unnecessary redundancy and provide other compelling values, including cost reduction, patient care improvement, patient satisfaction, research and educational benefits, and so on. Enterprise imaging and VNA are on the horizon for every institution as a mainstream expectation of patients, hospitals, and health care providers. Such a program comes

with a significant capital cost, and in these times of economic constraints in the health care industry, investments must be wisely chosen. We review the background of VNA and EI solution development and describe the characteristics and advantages of such systems. We, then, describe our experience in the implementation of Enterprise PACS of Shiraz University of Medical Sciences since 2015.

Objectives: By listening to this lecture, the audience is expected to:

1. Be familiar with the standard concept of Enterprise Imaging, Vendor Neutral Archive, standards and achievements.
2. Be aware of a variety of challenges of Enterprise Imaging Implementation on VNA infrastructure.
3. Be able to consider suitable planning before approaching the implementation of Enterprise Imaging on VNA infrastructure.

Outline: The use of digital imaging has substantially grown in recent decades in traditional services, new specialties, and departments. The need to share these data among departments and caregivers necessitates central archiving systems to communicate with various viewing applications and electronic medical records. This has promoted the development of modern vendor-neutral archive (VNA) systems. The need to aggregate and share imaging data from various departments has promoted the development of enterprise-imaging (EI) solutions that replace departmental silos of data with central healthcare enterprise databases. The important feature of most VNA systems is the programmable "life cycle" of studies or files. The VNA life cycle, if activated and programmed, compresses all studies and copy to a cheaper media saving space and money. It also can move, change, compress, change metadata, auto copy from folders, etc. In general, VNA must become the "final archive" of the PACS and other medical systems. Cardiology PACS, radiology PACS, pathology PACS, laboratory systems, radiotherapy and planning and other systems must be allowed to save final studies and reports on the VNA either by DICOM connection, HL7 delivery, direct upload, ftp or any other valid method.

Combining VNA and EI, the overarching themes include:

- Capturing data from any source and in any format.
- Storing data on any storage and with any strategy.
- Accessing and exchanging any image anywhere.

The following outcomes are to be expected after VNA and EI implementation:

- Reduced system complexity achieved through the consolidation of all storage solutions to a single centralized solution that can be operated more efficiently with implications on reliability and total cost of ownership.
- Improved technology management through controlling and synergies in information lifecycle management (ILM), disaster recovery (DR), workflow, data security, and data mining.
- Improved interoperability and data exchange as achieved through a single point of integration. An obvious necessity is that this single point of integration provides an interface implemented through adherence to open standards.
- Through this lecture, we are going to introduce the accurate concept of Enterprise Imaging and Vendor Neutral Archive, as well as related standards, technical and workflow challenges and prerequisites, to launch Enterprise Imaging Implementation on the VNA platform.

Besides, we are going to share the experience of previous Enterprise Imaging implementations in Iran, especially the Shiraz University of Medical Sciences as a Premier Enterprise PACS solution in Iran since 2015.

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## Templates, Modules, and Common Data Elements: Building Blocks of Structured Reporting

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### Abstract

Background: The report is mostly considered the main product of a radiology department, the quality of which affects the success and impact of the institution and radiologist. The current trend of using electronic tools for the enhancement of the quality