



How to Read Your Radiology Report

Imaging studies such as magnetic resonance imaging (MRI), computed tomography (CT), ultrasound, nuclear medicine or X-ray exams play an increasingly important role in the diagnosis and treatment of disease. After completing an imaging study, the radiologist will analyze the images and prepare a report summarizing the findings and impressions.

Electronic Health Records

Many patients today can access their health records — including radiology reports — electronically online. Electronic access to health records allows patients to make more informed healthcare decisions in partnership with their physicians. Plus, patients are empowered to electronically share radiology reports with other medical providers. This potentially increases the safety, quality and efficiency of patient care.

The radiology report is primarily a written communication between the radiologist interpreting the imaging study and the physician who requested the examination. Typically, this radiology report is sent to the physician who originally requested the imaging study and who then conveys the results to the patient. Many patients can also directly access their radiology reports and, in some cases, their medical images using online patient portals and electronic health records.

These records and reports often contain complex anatomical and medical terms. Examples and descriptions of the sections within a radiology report may be found below, including:

- type of exam
- clinical history
- comparison
- technique
- findings
- impression

The intent of this article is to provide a basic orientation to the structure and content of a radiology report. Because radiology reports may contain complex technical and medical information, a comprehensive explanation of the contents of the report are beyond the scope of this article.

Sections of the Radiology Report

Type of exam

The type of exam section indicates the date, time and type of imaging study that was performed.

Example:

Computed tomography (CT) of the abdomen and pelvis with intravenous and oral contrast performed January 10th, 2014.

Clinical history

The clinical history section lists patient information such as age, gender and relevant clinical information, including any existing disease and symptoms. If a diagnosis is known or suspected, it will be listed here, along with the indication or reason for the imaging study or the clinical question being asked. The availability of this information enhances the radiologist's ability to focus the report on each patient's unique condition.

Example:

64 year-old female with history of breast cancer and new onset abdominal pain.

Comparison

If the radiologist compared the imaging study with any of the patient's previous imaging studies, it will list them in the comparison section. Comparisons are most commonly made to exams of the same body region and study type.

Example:

Comparison is made to an ultrasound of the abdomen performed August 24, 2013.

Technique

The technique section describes how the imaging study was performed, including whether or not a contrast material was used. Because it is used for documentation purposes, this section is not typically useful for the patient or the referring physician. It can be very helpful to a radiologist to direct the performance of a future exam.

Example:

5 mm axial images from the lung bases through the pubic symphysis were acquired following the administration of intravenous and oral contrast. Coronal and Sagittal reformatted images were constructed from the source data.

Findings

The findings section lists the radiologist's observations and findings regarding each area of the body examined in the imaging study. The radiologist indicates whether each area was found to be normal, abnormal or potentially abnormal. Sometimes an area of the body is included and can be evaluated using the images, but is not discussed. This situation typically means that the radiologist did not find the area noteworthy for comment.

Example:

Lung bases: No pulmonary nodules or evidence of pneumonia.

Cardiac: Base of heart is within normal limits. No pericardial effusion.

Liver: Normal size and contour. There is a new 2 cm hypoattenuating focus in segment 8.

Gallbladder is surgically absent.

Biliary: No intra or extrahepatic biliary dilation.

Spleen: No splenomegaly.

Pancreas: No mass or ductal dilation.

Kidneys and Adrenals: No masses, stones or hydronephrosis. No adrenal nodules.

Lymph nodes: No lymphadenopathy.

Bowel: No dilation or wall thickening.

Bladder: Within normal limits.

Uterus and Adnexa: The uterus and bilateral ovaries are within normal limits for age.

Bones: No aggressive osseous lesions. Degenerative changes are present in the spine.

Soft Tissues: Bilateral fat and bowel containing inguinal hernias are again noted.

Other: No free fluid within the pelvis.

Impression

In the impression section, the radiologist combines the findings, patient clinical history and indication for the imaging study and provides a diagnosis. Because this section offers critical information for decision-making, it is considered to be the most important part of the radiology report.

For an abnormal finding, the radiologist may recommend:

- additional imaging
- biopsy
- correlating the finding with clinical symptoms or laboratory test results
- comparing the finding with prior imaging studies, if available.

For a potentially abnormal finding, the radiologist may make any of the above recommendations in addition to recommending follow-up imaging to assess whether the area remains the same or changes.

If a precise clinical diagnosis is not possible, the radiologist may offer a differential diagnosis, which is a list of possible diagnoses based on the imaging findings and the patient's clinical history.

If the report does not answer the clinical question, additional or follow-up imaging studies may be indicated. Additional studies may also be recommended to follow-up on a suspicious or questionable finding.

Example:

1. *No findings on the current CT to account for the patient's clinical complaint of abdominal pain.*
2. *There is a new 2 cm lesion in the liver which is indeterminate (cannot be definitively diagnosed by the study).*

RECOMMENDATION: Given the patient's personal history of breast cancer, an MRI of the liver is recommended to better characterize the indeterminate liver lesion to exclude the possibility of metastases (or cancer spread).

Additional Information

Once the radiology report is completed and signed, it is sent to the referring physician who can then discuss the results with the patient. The report may also be uploaded to an online electronic health record where the patient may access it.

If you have questions about your radiology report that your referring physician cannot answer, talk to your imaging facility staff. Many radiologists will make themselves available to patients to answer any questions their referring physician cannot answer.

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