

# Laboratory and X-Ray

## In General

To be covered, such tests must be either by or at the request of a physician. The tests may be:

- By physician-controlled facility (i.e., physician's office)
- By an independent laboratory.

Tests may be done by a technician under the direct supervision of a physician.

X-ray will be covered regardless of how or where made:

- Physician's facility
- Independent facility
- Hospital or convalescent center
- Mobile unit. Note: such mobile unit must be under physician supervision and must conform with federal and state laws. These X-rays are usually done for screening only and do not relate to care or treatment of an illness or injury.

Diagnostic tests include the following so long as they are ordered by a physician and necessary to the care and treatment of an illness or injury:

- Psychological tests
- Hearing evaluations
- Basal metabolism readings
- Electrocardiograms
- Respiratory function tests
- Cardiac evaluations
- Allergy tests.

## X-Rays

There are two types of X-ray services, diagnostic and therapeutic. A benefit is provided for the cost of diagnostic X-ray examination, including the cost of physician's services for taking an interpreting the X-ray picture, and use of X-ray equipment, plates and film. No benefit is provided under this coverage for therapeutic use of X-rays such as X-ray therapy for cancer, bursitis, dermatitis, etc.

## Interpretation of X-Rays

When a hospital radiologist does the initial interpretation of a radiological exam which such radiologist or a qualified technician performed on a hospital patient, the interpretation is covered as a physician's service. In addition, when a hospital radiologist interprets an X-ray that has already been interpreted by another physician, that interpretive service almost always constitutes patient care and thus, would also qualify as a physician's service. The radiologist's interpretation is a specialist's evaluation of the

interpretation of the attending physician or the emergency room physician, and the radiologist's evaluation of the interpretation of the attending physician or the emergency room physician, and the radiologist's findings could affect the course of treatment initiated or cause a new course of treatment to begin. The fact that the particular patient is no longer on the hospital premises at the time the radiologist interprets the X-ray should not be the controlling factor in deciding whether there was a physician's service, since the patient may be recalled. If, on the other hand, the radiologist is interpreting the X-ray solely for *quality control* purposes, e.g., randomly selecting films to appraise the technician's performance, quality of the film or equipment, etc., the services should be considered a hospital service.

## Diagnostic Procedures

These are the usual diagnostic procedures:

- **Radiology (Radiologist)**  
Uses X-ray and radioactive substances.
- **Pathology (Pathologist)**  
Examines the body tissues-usually microscopically.
- **EKG (Electrocardiogram) (Internist/Cardiologist)**  
Heart tracing by electric impulses.
- **Cardiac Cauterization (Cardiologist)**  
Examines heart chambers by inserting plastic tube.
- **Angiogram (Internist)**  
X-ray tracing of inserted dye into tissues/vessels.
- **Biopsy (Pathologist)**  
Tissue diagnosis.

## Certain Diagnostic Tests Analyzed

There are certain diagnostic tests which are occasionally difficult to the examiner and also somewhat expensive. These are looked at in some detail.

**Computerized Tomography.** This is sometimes referred to as Computerized Axial Tomography (CAT). Diagnostic examinations of the head and body by CAT scans if the examiner finds them to be reasonable and customary and done on acceptable CAT scan equipment.

- **Reasonable and Customary**  
As determined by medical consultant.
- **Acceptable Equipment**  
Model must be known to the FDA. Must be in the free market release of development.

CAT scans performed in mobile units must be watched carefully by the examiner due to the possibility of abuse. Such exams may be done more on a factory basis than on a needs basis. Also billing excesses may be seen more commonly with mobile units. With mobile units, a physician must both order a scan and supervise it and

interpret it. Another problem to be carefully watched by the examiner is the physician-owned CAT scan units.

**Magnetic Resonance Imaging.** Magnetic Resonance Imaging (MRI) is a noninvasive method of graphically representing the distribution of water and other hydrogen-rich molecules in the human body. In contrast to conventional radiographs of CAT scans, in which the image is produced by X-ray beam attenuation by an object, MRI is capable of producing images by several techniques. In fact, various combinations of MR image production methods may be employed to emphasize particular characteristics of the tissue or body part being examined. For the most part MRI is acceptable and fully covered by the plan. The MRI must be reasonable and customary, as established by a medical consultant, and also the MRI must be on the FDA-approved list. MRI is particularly helpful in these areas:

- Examination of head, central nervous system and spine.
- Multiple sclerosis
- Pelvic and retroperitoneal tumors
- Disorders of cancellous bone and soft tissue
- Pericardial thickening
- Bone cancer and aseptic necrosis
- Bone infections with patients with metal prosthesis
- Mediastinal masses and aneurysms
- Liver, urogenital, adrenal tumors.

These are some instances where MRI is not generally appropriate.

- Where there is a cardiac pacemaker, or metal clips on vascular aneurysms
- Where the patient is pregnant
- Where the patient has claustrophobia
- Where the organ being viewed is in motion such as the heart or lung
- For cortical bone calcification.

The highly sensitive nature of MRI allows it to differentiate blood vessels and their contents, organs and their internal structure (including benign or malignant growths) and different types of musculature. It is superior to CAT scanning at detecting brain tumors and disorders of the central nervous system (including multiple sclerosis and stroke).

MRI can produce detailed images of the lumbar and cervical spinal regions. It is also used to diagnose disorders of the cardiovascular system and create images of the chambers, valves, and major vessels of the heart. And magnetic resonance imaging presents a positive alternative to surgery for the exploration of some major joints, mostly notably the knee. It delineates articular cartilage and its surrounding muscles and tendons.

**Electrocardiograph (EKG) Services.** Reimbursement may be made for EKG services rendered by a physician or incidental to such to his services or by a laboratory or supplier of portable X-ray services. Since there is no coverage for EKG services of any type rendered on a screening basis or as part of a routine examination, the claim must indicate the signs and symptoms or other clinical reason necessitating the services. A separate charge by an attending or consulting physician for EKG interpretation should be allowed only where it is the normal practice to make such charge in addition to the regular office visit charge. No payment should be made for EKG interpretations by

individuals other than physicians. A claim involving EKG services furnished by a laboratory or a portable X-ray supplier should identify the physician ordering the service and, where the charge includes both the taking of the tracing and its interpretation, the identity of the physician making the interpretation. No separate bill for the services of a physician should be paid unless it is clear that such physician was the patient's attending physician or was acting as a consulting physician. The taking of an EKG in an emergency, i.e., where the patient is or may be experiencing what is commonly referred to as *heart attack*, would be covered as a laboratory service or a diagnostic service by a portable X-ray supplier only where the evidence shows that a physician was in attendance at the time the service was performed or immediately thereafter. Several problems with EKG are reviewed:

- **Long Term EKG Monitoring.** This is also referred to as long-term EKG recording, Halter recording, or dynamic electrocardiography, is a diagnostic procedure which provides a continuous record of the electrocardiographic activity of a patient's heart while he is engaged in his daily activities. Many patients with cardiac arrhythmias are unaware of the presence of an irregularity in heart rhythm. Due to the transient nature of many arrhythmias and the short intervals in which the rhythm of the heart is observed by conventional standard EKG techniques, the offending arrhythmias can go undetected. With the extended examination provided by the long-term EKG, the physician is able not only to detect but also to classify various types of rhythm disturbances and wave form abnormalities and note the frequency of their occurrence. The knowledge of the reaction of the heart to daily activities with respect to rhythm, rate, conduction disturbances, and ischemic changes are of great assistance in directing proper therapy and rehabilitation. Long term EKG monitoring is particularly effective in these instances:
  - Detecting transient episodes of cardiac dysrhythmia
  - Monitoring effects of arrhythmic drugs
  - Monitoring coronary artery diseased patientsLong term EKG monitoring is not appropriate for monitoring a pacemaker. Monitoring for period in excess of 24 hours is questionable.
- **Patient-Activated EKG Recorders.** These are marketed under a variety of brand names and permit the patient to record an EKG upon manifestation of symptoms, or in response to a physician's order (e.g., immediately following strong exertion). Most such devices also permit the patient to simultaneously voice-record in order to describe symptoms and/or activity. In addition, some of these devices permit transtelephonic transmission of the recording to a physician's office, clinic, hospital, etc., having a decoder/recorder for review and analysis, thus eliminating the need to physically transport the tape. Some of these devices also permit a *time sampling* mode of operation. However, the *time sampling* mode is not covered-only the patient-activated mode of operation, when used for the indications described below, is covered at this time. Services in connection with patient-activated EKG records are covered

when used as an alternative to the long-term EKG monitoring (described above) for similar indications-detecting and characterizing symptomatic arrhythmias, regulation of anti-arrhythmia drug therapy, etc. Like long-term EKG monitoring, use of these devices is covered for evaluating patients with symptoms of obscure etiology suggestive of cardiac arrhythmia such as palpitation, chest pains, dizziness, light-headedness, near syncope, syncope, transient ischemic episodes, dyspnea and shortness of breath. As with long-term EKG monitors, patient-activated EKG recorders may be useful for both inpatient and outpatient diagnosis and therapy. While useful for assessing some post-coronary infarct patients in the hospital setting, these devices should not, however, be covered for outpatient monitoring of recently discharged post-infarction patients.

- **Computer Analyzed EKG's.** Computer interpretation of EKG's is recognized as a valid and effective technique which will improve the quality and availability of cardiology services. Reimbursement may be made for such computer service when furnished in the setting and under the circumstances required for coverage of other electrocardiographic services. Where either a laboratory's or a portable X-ray supplier's charge for EKG services includes the physician review and certification of the printout as well as the computer interpretation, the certifying physician must be identified before the entire charge can be considered a reimbursable charge. Where the laboratory's (or portable X-ray supplier's) reviewing physician is not identified, the examiner should conclude that no professional component is involved and make its charge determination accordingly. If the supplying laboratory (or portable X-ray supplier when supplied by such a facility) does not include professional review and certification of the hard copy, a charge by the patient's physician may be recognized by the service. In any case, the charge for the physician component should be substantially less than that for physician interpretation of the conventional EKG tracing in view of markedly reduced demand on the physician's time where computer interpretation is involved. Considering the unit cost reduction expected of this innovation, the total charge for the complete EKG service (taking of tracing and interpretation) when computer interpretation is employed should never exceed that considered reasonable for the service when physician interpretation is involved.
- **Transtelephonic EKG Transmissions.** Coverage is extended to include the use of transtelephonic electrocardiographic (EKG) transmissions as a diagnostic service for the indications described below, when performed with equipment meeting the standards described below, subject to the limitations and conditions specified below. Coverage is further limited to the amount payable with respect to the physician's service in interpreting the results of such transmissions, including charges for rental of the equipment. The device used by the beneficiary is part of a total diagnostic system and is not considered durable medical equipment.

- **Plethysmography.** Plethysmography involves the measurement and recording (by one of several methods) of changes in the size of a body part as modified by the circulation of blood in that part. Plethysmography is of value as a noninvasive technique for diagnostic, preoperative and postoperative evaluation of peripheral artery disease in the internal medicine or vascular surgery practice. It is also a useful tool for the preoperative podiatric evaluation of the diabetic patient or one who has intermittent claudication or other signs or symptoms indicative of peripheral vascular disease which would have a bearing on the patient's candidacy for foot surgery. The oldest form of plethysmography is the venous occlusive pneumoplethysmography. This method is cumbersome, time consuming, and requires considerable training to give useful, reproducible results. Nonetheless, in the setting of the hospital vascular laboratory, this technique should be considered a reasonable and necessary procedure for the diagnostic evaluation of suspected peripheral arterial disease. It is unsuitable for routine use in the physician's office. Recently, however, a number of other plethysmographic methods have been developed which make use of phenomena such as changes in electric impedance or changes in segmental blood pressure at constant volume to assess regional perfusion. Several of these methods have reached a level of development which makes them clinically valuable. Coverage is extended to those procedures listed in Group I below when used for the accepted medical indications mentioned above. The procedures in Group II are still considered experimental and are not covered at this time.
  - **Group I**
    - Segmental Plethysmography
    - Electrical Impedance Plethysmography
    - Ultrasonic Measurement of Blood Flow
    - Oculoplethysmography
    - Strain Gauge Plethysmography
  - **Group II**
    - Inductance Plethysmography
    - Capacitance Plethysmography
    - Mechanical Oscillometry
    - Photoelectric Plethysmography
- **Laboratory Tests for Cardiac Renal Disease (CRD) Patients.** Laboratory tests are essential to monitor the progress of CRD patients. The following list and frequencies of tests that are covered. Bills for other types of tests are considered nonroutine. Routine tests at greater frequencies must include medical justification. Nonroutine tests generally are justified by the diagnosis. The routinely covered regimen includes the following tests.
  - **Per Dialysis**
    - Hematocrit
  - **Per Week**

Prothrombin time for patients on anti-coagulant therapy

Serum Creatinine

BUN

- **Monthly**

CBC

Serum Calcium

Serum Potassium

Serum Chloride

Serum Bicarbonate

Serum Phosphorus

Total Protein

Serum Albumin

Alkaline Phosphatase

SGOT

LDH

Guidelines for tests other than those routinely performed include:

- Bone surgery (annually)
- Nerve conductor velocity test (quarterly)
- Chest X-ray (twice a year)

## **Laboratory Tests**

Special rules of reasonableness, other than dollar amount of medical necessity, may be followed with laboratory tests.

A diagnostic laboratory test, whether performed in a physician's office, in an independent laboratory, or in another laboratory, is to be treated as a *laboratory service*. The term, *another laboratory*, refers to such examples as a reference laboratory that performs services only for other laboratories, or a hospital laboratory functioning as an independent laboratory. Also, when physicians and approved laboratories perform the same test, whether manually or with automated equipment, the services will be deemed similar.

**Determining prevailing charges for single laboratory tests.** To be consistent with the concept of inherent reasonableness, no distinction should generally be made in determining reasonable charges for laboratory services between: (1) the situs where the service is performed, i.e., physician's office, or other laboratories, or (2) the methods of the testing process used, whether manual or automated.

Therefore, when only one test is performed for a covered person, the prevailing charge for the single laboratory test should be derived from the customary charges (weighted by frequency) or *both* the physician and other laboratories that perform the test in the locality, including tests performed manually or with automated equipment. The automated equipment charges to be used are those for a single test that is not performed as part of a battery test.

The customary charges of physicians include charges for tests performed in their own offices as well as charges billed for tests performed by other laboratories. The

customary charge of other laboratories include only those charges billed to the general public but not to physicians.

**Determining prevailing charges for automated battery tests.** The common automated battery or panel tests comprise special groupings of blood chemistries which enable physicians to more accurately diagnose their patient's medical problems.

The following list contains some of the tests which can be and are frequently done as groups and combinations on automated multichannel equipment:

- Albumin
- Bilirubin, direct
- Bilirubin, total
- Calcium
- Carbon dioxide content
- Chlorides
- Cholesterol
- Creatinine
- Globulin
- Glucose (sugar).