Clinical Practice Committee Statement:

Radiology Interpretation in Emergency Department after 5:00PM (7/11/2011)

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SUMMARY

Accurate, timely interpretations of radiologic studies by board-certified radiologists are necessary to provide the best patient care and promote patient safety. This can only be accomplished if attending radiologists are interpreting studies while clinical care is being provided. Emergency physicians should insist on timely attending radiologist interpretations of radiological studies, even during off-hours.

CLINICAL POLICY STATEMENT

Background:

In order to provide the best patient care and promote patient safety, accurate, timely interpretations of radiologic studies by board-certified radiologists are necessary. A former President of the American College of Radiology wrote, “The crux of the problem is this: How on the one hand can [radiologists] espouse the principle that the patient is best served when the radiologist interprets films, and on the other hand infer that the principle applies only during certain hours?”[1] Emergency physicians should insist on real-time interpretation of special studies by board-certified radiologists.

Currently, interpretations of radiologic studies on evenings, weekends and holidays are not managed in the most beneficial manner for emergency department patients. In general, three models exist for how non-routine radiology studies are interpreted during off-hours. 1) Emergency physicians are responsible for providing their own interpretations to determine patient care; 2) Radiology residents acting without direct supervision provide interpretations of CT scans, MRIs and ultrasounds; or 3) "Nighthawk" services in which off-site attending radiologists review certain studies in real time.

Research:

Research to date on the accuracy and safety of non-radiologists is limited. The overwhelming majority of the studies retrospectively reviewed discrepancies between the interpretations of attending radiologists and those of other physicians, and then attempted to classify discrepancies as "major" or "minor." Although methodologies vary from study to study and definitions tend to be vague, "major discrepancies" are defined in one paper as those where the findings are "of major clinical importance and the knowledge of which would result in immediate therapeutic plan alterations" and "minor discrepancies" are defined as "those that were related to the clinical presentation and are not life threatening but may result in therapeutic plan alterations,"[2] These definitions do not include discrepancies relating to "incidental" findings such as pulmonary nodules that are not related to the clinical presentation.

Major discrepancies are reported to occur in approximately 2% (range 1-7%) of studies. However, depending on the initial patient presentation, diagnoses such as pneumothoraces, lumbar spine fractures, retroperitoneal hemorrhage with possible IVC injuries, and pelvic fractures have been classified as "minor" discrepancies.[3]

Few studies evaluate the accuracy of nighthawk teleradiology services. In general, teleradiologists can interpret studies in a timely manner and with similar accuracy to in-house attending radiologists.[4-5]

DISCUSSION:

Though the major discrepancy rate in reading specialized x-rays by the non-radiologist may seem small, it translates into a significant number of critical mistakes in an emergency department over the course of a year. Studies estimate that an emergency department seeing 50,000 patients annually may order about 30 CT scans per day, 58% of which are between 7PM and 7AM.[6] Thus, a 1% major discrepancy rate

translates into 108 critical misinterpretations per year, 60 occurring between 7PM and 7AM . Each of these errors could result in the death of a patient or cause serious morbidity.

It is also important to consider the potential long-term consequences of “minor” or “clinically insignificant” misreadings. In order to provide the best quality care for patients, even these “insignificant findings” need to be explained thoroughly to patients while in the emergency department.

CONCLUSION:

Accurate, timely, interpretations of radiologic studies by board-certified radiologists are necessary to provide the best patient care and promote patient safety. This can only be accomplished if attending radiologists are interpreting studies while clinical care is being provided. Specialties such as emergency medicine and surgery have adapted to ensure fully-trained physicians are providing care to patients 24 hours a day, 7 days a week. Emergency physicians should insist on timely attending radiologist interpretations of radiological studies, even during off-hours. AAEM supports billing for interpretations that are contemporaneous with patient care.