



# College of Veterinary Medicine Policies and Procedures

Subject: Goals

Section: Diagnostic Imaging  
Number: CVM 6.10.01  
Pages: 1  
Date: 2012  
Replaces Policy Dated: 1995  
To Be Reviewed Yearly by: AHC Director and  
Diagnostic Imaging Service Chief  
Source:  
Cross Reference:

## GOALS

To provide excellent instruction for students in diagnostic imaging interpretation and techniques, so they graduate with a strong knowledge base in radiology and with enthusiasm for diagnostic imaging.

To provide efficient, reliable service support to the Animal Health Center in clinical diagnostics using a team approach to optimize patient care and client satisfaction.

To provide support for clinical and basic research projects as time and technical support allow.

Approved: Gary J. Burt 9/26/12  
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Approved: Kent H. Hoblet 10/17/12  
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# College of Veterinary Medicine Policies and Procedures

Subject: Scheduling, Requests and  
After-Hours Imaging

Section: Diagnostic Imaging  
Number: CVM 6.10.02  
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## **SCHEDULING, REQUESTS AND AFTER-HOURS IMAGING**

Scheduling for all imaging examinations will be performed in such a way so as to expedite service commitments. Examinations will be prioritized according by the time submitted.

1. Priority for radiographic examinations
  - a. Emergencies
  - b. Anesthetized animals
  - c. Outpatients
  - d. Inpatients
  - e. Research animals

Within each group, priority is established according to the order in which requests were submitted. Only emergency procedures and post-operative studies will be performed after 5:00 PM, on weekends and on holidays.

2. Exceptions to the scheduling protocol should be cleared through the senior technologist and/or radiologist on duty.
3. Anesthesia Cases:
  - a. Anesthesia cases with the potential for subsequent surgery should be scheduled as early in the day as possible
  - b. All requests requiring general anesthesia should be submitted at least one day in advance when possible.
4. Research Examinations:
  - a. Anesthetized research cases (all radiology-supported research) must be submitted at least 24 hours in advance for scheduling. Non-anesthetized research cases should be submitted 24 hours in advance to guarantee timely examination. Clinic patients take priority over research cases in nearly all instances.
  - b. Imaging prices must be discussed with the Service Chief or senior technologist prior to performing studies for research projects.
5. Special Procedures:

Special contrast examination requests must be approved by the radiologist on floor duty before a request is submitted. Pertinent clinical information must be included on the request form. The request must be submitted in advance with the on-duty radiologist's approval, and the animal must be adequately prepared prior to start of the study. Otherwise, previously submitted inpatient cases, research cases, or previously approved anesthetized cases will proceed as scheduled.

## **Requests**

- A. Paper request forms must be submitted for **every** study. This also includes CT and all studies at Premier.
- B. Imaging studies must also be requested in UVIS for **every** study. If the UVIS request is incomplete, we will not receive it, and the exam will not be performed. Once a study is requested with complete information (on paper and in UVIS), it will then be scheduled and put on the radiology board. Charges are not automatically entered when you request the study. Rather, our technicians enter the charges once the study is complete.
- C. Request forms (on paper and in UVIS) must be filled in **completely**. This includes complete data, clinician name(s), HISTORY, and whether the animal will be sedated or anesthetized. This is part of the medical record, and items like date, clinician, history, etc. are very important. The more history provided on the request, the more helpful we can be.
- D. A hard copy printed from the UVIS request may serve as the paper request.
- E. Other important information to include:
  - a. Whether or not the animal will bite
  - b. Whether or not the animal needs oxygen
  - c. For a pelvis, whether or not the animal can be “frog-legged”
  - d. If you suspect a zoonotic disease such as leptospirosis
  - e. Anything a person handling the patient should know
- F. Please be specific regarding requests for extremities by indicating which limb and which part.
- G. It is not necessary for the clinician on a case to approve radiographs. Radiograph approval is obtained from a radiologist or radiology resident. Please make sure one of us approves films before the animal leaves radiology.
- H. If for some reason a radiologist or radiology resident is not present or available, radiographs must be approved by the attending clinician before the study is closed and sent to PACS.
- I. If the clinician on the case would like to be present at the end of the study, please indicate this on the request.
- J. Post processing of the images (e.g. cropping, labeling, etc.) is to **only** be performed by radiologists, radiology technicians or radiology residents! Please do not do **any** post processing or send any images to PACS.

## **Thoracic Radiographs**

### **Heartworm positive/heartworm suspects:**

- Three view thorax – CARDIAC STUDY
  - Right lateral
  - VD
  - DV
- Why? The VD view is used for evaluation of the cardiac silhouette and lung fields. The DV view is used for evaluation of the caudal lobar pulmonary arteries. The pulmonary lobar arteries are the first structures affected radiographically by heartworm disease in dogs.

### **Cardiac Disease**

- Three view thorax – CARDIAC STUDY
  - Right lateral
  - VD
  - DV
- Why? VD is used for evaluation of the cardiac silhouette and caudal lung fields. DV view is used for evaluation of the caudal lobar pulmonary vessels.
- ECHOCARDIOGRAPHY CANNOT DETERMINE WHETHER YOUR PATIENT IS IN HEART FAILURE!! Only radiographs can be used for this purpose (pulmonary venous distention and cardiogenic pulmonary edema). Radiographs should always be made prior to ultrasound examination (within 48 hours). However, there are a few exceptions such as rechecks of functional parameters and pre-chemotherapy studies for baseline.

### **Met Checks**

- Three view thorax – MET CHECK
  - Right lateral
  - Left lateral
  - VD

### **Suspect Pleural Effusion**

- Two view thorax – ROUTINE THORAX
  - Right lateral
  - VD preferred
- Why? If the patient can tolerate it, a VD is preferred over a DV. When a patient is in sternal recumbency, the fluid will surround the heart causing you to be unable to evaluate the cardiac silhouette (due to border effacement). If the patient is in dorsal recumbency, the fluid is along the dorsal thorax and away from the heart, allowing for evaluation of the cardiac silhouette.

### **Pneumonia**

- Three view thorax (right and left lateral and VD/DV) – MET CHECK
- Why? If mild disease is present, it may be seen on only one view. It is especially important to obtain the same views each time the animal is radiographed in order to monitor therapy.

### **Thoracic studies available**

1. Routine thorax – two views (right lateral and VD) – pleural effusion and routine studies
2. Met check/pneumonia – three views (right lateral, left lateral and VD) – met check and pneumonia
3. Cardiac – three views (right lateral, VD and DV) – heartworm disease and other cardiac disease (especially to check for congestive heart failure)

## **Extremities, Skull and Spine**

- Be specific about laterality. You may know on which limb the animal is lame, but we do not. Make sure left vs. right and front vs. hind are identified on the request.
- Please be specific about the area of interest. A request for “right hind leg” is not acceptable. If you are interested in the stifle or tarsus, be specific. If you are interested in one of the long bones, be specific.
- Carpus and tarsus: A standard is four views – lateral, dorsopalmar/dorsoplantar, and obliques. Why? These joints are made up of superimposed cuboidal bones. At least four views are needed to completely evaluate all the bones and joints without superimposition.
- Equine fetlock studies include a lateral view, a flexed lateral view, a dorsopalmar/dorsoplantar view and two oblique views.
- Anesthesia or very heavy sedation is required for adequate films of the skull and spine. Without anesthesia, we cannot obtain films of diagnostic quality. These studies in an awake patient create stress on the patient and staff, lead to nondiagnostic films, and cause an increase in radiation dose to personnel and patient due to repeat exposures.
- Sedation is important for all orthopedic studies. These animals are tense and often painful which makes adequate positioning impossible.
- Heavy sedation is required for all OFA and PennHIP pelvic studies.
- Please have your sedation ready when the request is submitted so we can be as efficient as possible. However, do not sedate an animal and show up in radiology without talking with radiology first. We may not be able to take your requested radiographs at that particular time. Please call us and make sure your study can be performed before giving your sedation.
- The requirement for sedation or anesthesia for skull, spine or extremity views may be waived in uncommon circumstances on a case-by-case basis, **with prior approval of the radiology faculty or house officers.**

## **“Dog-o-grams” and “cat-o-grams” (whole body studies)**

- These are unacceptable! Why? Because the x-ray beams are divergent, structures on the edges of films will be distorted. For instance, the cardiac silhouette may appear enlarged, or pelvic structures may appear abnormal. If you are concerned about both the thorax and abdomen, you must obtain two separate studies; lateral and VD of the thorax and lateral and VD of the abdomen. They will be charged accordingly. We are a tertiary care institution and should be practicing at that level.
- In RARE instances, the requirement of two separate studies may be waived on a case-by-case basis, with prior approval of radiology faculty or house officers or, in after-hours EMERGENCIES, at the clinical discretion of the attending clinician.

## Ultrasound

- It is important that the student on the case or another student or technician on the service be available for the scan. Why? We do not always have enough help for restraint. Even more importantly, it is a learning experience.
- Limited ultrasounds (such as urinary bladder only) will be limited to recheck examinations only. Our service unanimously agrees that performing a limited study for a patient not previously scanned by our service is inappropriate. Our fees for abdominal and cardiac ultrasounds are lower than at many other universities.
- If you have a patient scheduled for echocardiography and you think sedation will be necessary, please check with us first if possible. We have several recommended sedation protocols that will have minimal effect on the study.

## CT

- It is important for radiology and for the other services that the clinician on the case speak to the radiologist/imaging house officer prior to performing a CT.
  - Why? We can help! We can help decide the best field of view and best test for the patient. Also, if we are aware of the exam, we can be present and determine whether or not additional slices or a different plane should be obtained.
  - We also must be made aware of the time of the scan. If not, a radiologist may be unavailable to review the images.
- If possible, please give two to three days advance notice to radiology if a large animal CT is to be performed.
- If contrast will be used for large animal CT scans, the contrast media must be ordered from the Pharmacy in advance as radiology does not stock the large volume of contract required for these studies.
- What is the best way to let a radiologist know about a CT at the time of request?
  - We prefer that the clinician speaks to one of the radiologists in person. You are free to interrupt rounds if needed.
  - If this is not possible, the next best way is to call us in radiology.
  - If this is not possible, please attach a detailed case summary to the request and have it signed by the clinician.
  - If the CT is to be performed the next day, you may send an email to the radiology doctors. We recommend an email to all of us as we have variable clinical appointments and different duties within the service from day to day.
- Please have a radiologist/radiology resident look at CT images before the animal leaves the CT table unless there is an emergency. We may ask for more images to get the most information out of the study.
- Radiographs of the CT area of interest are not required prior to CT for the following procedures unless requested by the clinician on the case.
- Pre- and post-contrast studies are performed in most cases. Exceptions include IVDD or obvious spinal cord lesion, elbow dysplasia, and trauma. Please consult the radiologist or imaging house officer if there is a question.

## **Fluoroscopy**

Consultation with the radiologist or radiology resident on floor duty is required upon request of a fluoroscopic study. Some of these studies require preparation of the animal. We may request sedation or we may ask that there be no sedation on board, depending on the study requested. We would like to discuss the plan for the procedure with the clinician and coordinate the schedule so the clinician on the case is present. A radiologist or radiology resident must be present for diagnostic fluoroscopy. This is a dynamic study and is difficult to interpret accurately from saved images. Each radiologist interprets his or her own fluoroscopic studies.

## **Contrast Studies**

It is required to consult a radiologist or radiology resident upon request of a contrast study. Some of these are time consuming procedures that may interfere with further diagnostics later on. Also, most contrast studies require prior patient preparation. If a procedure is commenced without consultation, there could be inappropriate time and money spent. We are trained to know which procedure is best for certain conditions. We can then discuss patient preparation and coordinate schedules. A radiologist or radiology resident should be available at the beginning of a study and at the end to determine if further images are needed.

## **Radiologist/Resident Daily Schedule**

- Please see the board outside the entrance to radiology or the large white board inside radiology for the daily duties of the radiologists and residents
- Ultrasound = sonographer for that day (including echocardiography, with some exceptions)
- Floor/interpretation = radiologist/resident helping to coordinate cases coming through radiology, approving films for quality and providing initial interpretations
- Dictation = radiologist/resident in the reading room; this person is reading reports for medical records
- Premier = radiologist/resident designated to go to any study at Premier that day
- Floater = radiologist/resident who covers any other area needed or helps the others
- Please check the large white board outside the front door to radiology, the large white board in radiology, or the small white board in radiology to find out which of us is on ultrasound, floor, etc. This information is updated daily.

## **Premier Studies**

When scheduling a study at Premier, please consult with a radiologist first. Once a plan has been discussed, give a paper request and desired time to Jessica (1<sup>st</sup>), Lee Ann (2<sup>nd</sup>), or Joe (3<sup>rd</sup>). When a time has been scheduled, put in a UVIS request.

### **MRI**

- Everyone attending the MRI at Premier MUST complete the online MRI safety course and quiz. See Jessica or Lee Ann in Radiology for assistance.
- All MRI studies will need a metal scan prior to the MRI appointment, as well as a separate paper and UVIS request.
- You will be responsible for figuring up the Propofol dosage and for ordering it from Pharmacy.
- Please notify anesthesia of the MRI study and turn in a request.
- Make sure the patient has a t-port catheter placed in the appropriate location. Please check with the radiologist/radiology resident for proper catheter locations.

- Take the chart, patient information sheet and Propofol CRI sheet to Premier with you.
- You must leave one hour early.


### CT

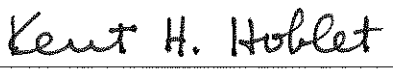
- Mark sure the patient has a catheter placed in the appropriate location, as well as a blue, needleless injection cap. You must leave 30 minutes early.
- When requesting an imaging study, please make sure you submit the correct request and that the request is complete. We currently need both a paper request AND a request in UVIS. If you do not complete each question in the UVIS request, it will not be sent to us for scheduling. If we do not get BOTH complete requests, we cannot perform your study. Please call us if you have ANY questions about submitting requests.
- All CT scans must be discussed with a radiologist or radiology resident BEFORE the request is submitted. DO NOT SHOW UP IN CT WITH A PET UNDER ANESTHESIA WITHOUT TURNING IN A REQUEST AND SPEAKING TO A RADIOLOGY DOCTOR.

### Emergency/ After Hours Imaging

- A radiologist or resident is “on call” for emergency consultations after hours, on weekends and on holidays. Our “on call” schedule will be given to the AHC Director’s office and will also be available on the bulletin board in radiology.
- The intern on duty or attending clinician should call the radiologist/resident if consultation is needed. The operator should NEVER call in the radiologist/resident on duty. They should not call in the radiologist/resident unless absolutely necessary. The radiologist/resident will discuss the case with the appropriate veterinarian before coming in for consultation.
- The radiology technician on duty must be called in when performing contrast studies. This will ensure that the study is performed appropriately.
- Radiology students on call should not be called in until the patient has been examined and approval for radiography has been obtained by the client. A request must be submitted to the radiology students BEFORE they will take radiographs. The clinician requesting after hours radiographs must approve the images before the radiology students leave so necessary repeats can be taken at that time. Exceptions may be allowed in extreme emergencies.
- Radiology students on emergency duty are expected to adhere to the policies established by the radiology service.
- If a radiologist or radiology resident is called in, the client will be charged an emergency consult fee (CODE 7.970, Cost \$64.00 as of October 2012).
- If a radiology tech is called in, the client will be charged an emergency tech fee (Cost 3.2050, Cost \$50.00 minimum for up to two hours with additional charges for each hour beyond two hours as of October 2012).
- When a radiologist/resident is called in for ultrasound, the animal should be prepared prior to arrival. This includes completed radiographs, completed ultrasound request, and clipped fur.
- Ultrasonography will be performed outside of normal hours for **emergencies only**.



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# College of Veterinary Medicine Policies and Procedures

Subject: Students

Section: Diagnostic Imaging

Number: CVM 6.10.03

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## STUDENTS

Quality teaching in clinical diagnostic radiology will be provided in group rounds with a radiologist or radiology resident. Radiographic findings will be discussed on daily cases as examinations are completed, whenever possible. Radiographic principles discussed will be put into practice during daily examinations.

From 8:30 to 10:00 a.m., the students will participate in interpretive radiology rounds.

During the four week rotation in Diagnostic Imaging, the students will provide daily radiology and ultrasound service to the large and small animal clinics. All junior students in the rotation share emergency duty for after-hours imaging requests. When called in for emergency duty, the radiology students will be responsible for obtaining quality radiographic images as requested by the requesting intern, resident, or attending clinician.

It is expected that students on the radiology rotation use the four weeks to expand on what has been learned in previous years in the curriculum. Students should have a foundation in topics such as normal radiographic anatomy, the 5 radiographic opacities, and basic knowledge of radiographic abnormalities before beginning the rotation. Learning activities are structured to review and increase the knowledge base in interpretive and technical skills while applying diagnostic principles to medical case analysis. Interpretive skills will be practiced during daily clinical activity and scheduled daily topic rounds. Technical skills will be practiced daily and discussed by radiology technologists with students.

Use proper radiation safety procedures when producing any radiographic study. This is not negotiable. If unprotected human digits or other body parts are present on a radiograph taken by students, all students involved will be considered responsible and additional assignments will be given. The assignment typically is a paper on some aspect of radiation safety. If radiation safety is breached and an additional assignment is made, the student's grade will not be released until the work is completed.

## **Learning Activities**

### First Week

- Orientation – Technicians
  - Equipment
  - Procedure requests
  - Image retrieval
  - Protection
  - Technique Chart Module
  - Ultrasound equipment
  - Emergency/Student Duty Schedule
  - Expectations for practical exam
- Orientation – Radiologist
  - Syllabus
  - Basis of Evaluation
  - Expectations for written exam
  - Expectations for successful completion of the rotation
- Daily Topic Rounds
  - Discussion of musculoskeletal disease presentations in the dog and cat
- Daily interpretation of clinical diagnostic images – all species

### Second Week

- Daily Topic Rounds
  - Discussion of thoracic disease presentations in the dog and cat
- Daily interpretation of clinical diagnostic images – all species
- Develop systematic approach for evaluation of the thorax
- Application of ultrasound to cardiac disease
- Develop differential diagnoses of thoracic diseases
- Interdisciplinary knowledge – describe next diagnostic step and prognosis pertaining to thoracic disease
- Midblock evaluation after completion of 2<sup>nd</sup> week

### Third Week

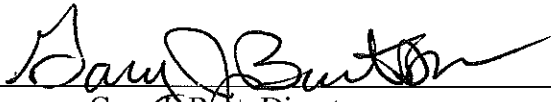
- Daily Topic Rounds
  - Discussion of abdominal disease presentations in the dog and cat
- Daily interpretation of clinical diagnostic images – all species
- Major organ systems will be presented for discussion
- Develop systematic approach applied to the abdomen/DDx/next step/prognosis


### Fourth week

- Written interpretation exam
- Feedback/Evaluation (end rotation)
- Presentation Categories – each student will choose one topic and will turn in a copy of his or her presentation on a CD

Expected Outcome

1. Improvement in each student's ability to use diagnostic imaging in a knowledgeable and logical manner to facilitate medical diagnoses and proposed therapies in dogs, cats, and horses
2. Quality service for clinical patients
3. Improved communication skills demonstrated by each student
4. Displayed teamwork and professional attitude

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# College of Veterinary Medicine Policies and Procedures

Subject: Animal Preparation

Section: Diagnostic Imaging

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## **ANIMAL PREPARATION**

Animals should be properly prepared for all imaging examinations before those examinations are performed in order to avoid delays, inaccurate diagnoses, wasted time, unnecessary radiation exposure, and additional client charges.

1. Animals presented for abdominal radiographs or ultrasound examination should be fasted for 24 hours, and encouraged to defecate prior to examinations. When necessary, a laxative or enema should be given at least 12 hours prior to examination.
2. If an animal is improperly prepared necessitating reexamination, an additional film charge will be assessed.
3. The coats of animals should be clean, dry and free of topical medications. The shoes of horses should be removed and the feet cleaned for examination of the equine third phalanx and navicular bone. Bandages should be removed when possible. These procedures should be performed by the requesting clinician or their assigned students.

### **Ultrasound – general**

1. No clip = no scan. All patients must be clipped appropriately before entering the ultrasound room. The sonographer should be consulted prior to clipping if there is a question about how much fur should be clipped. The sonographer should also be consulted if you are unable to clip the patient. There are exceptions to every rule, and this one is no different. If clipping the patient is not an option, please discuss this with the sonographer.
2. If it is the patient's first visit to radiology, it is required that radiographs be obtained prior to ultrasound. Ultrasound is not a perfect imaging modality. We can miss things. For instance, gas in the gastrointestinal tract may obscure the intestinal disease of that or other abdominal organs. In the instance of ultrasound on the other side of the diaphragm, it is important to get an overview of heart size, chamber enlargement, and whether or not heart failure is present.
  - a. There are exceptions to every rule. For instance, radiographs would be useless in most cases of peritoneal effusion. If an ultrasound is desired on a patient without prior radiographs, the sonographer must be consulted before the request is submitted.
  - b. Recheck ultrasounds usually do not require radiographs. Please check with the radiologist/resident on ultrasound before submitting an ultrasound request.

## **Ultrasound-guided procedures (FNA, biopsy, cystocentesis, etc.)**

1. Before an ultrasound-guided procedure is performed, it is essential that the **clinician** on the case discuss it with the radiologist/radiology resident on ultrasound. We have training in these procedures and would like to help choose the best plan for the patient.
  - a. We have had cases in which students were sent to radiology to tell the doctor on ultrasound to perform procedures which may have been unnecessary or inappropriate for that patient. Because these students were messengers, they were unable to answer our questions and make decisions on the most appropriate way to proceed.
  - b. **Routine thoracocentesis, pericardiocentesis, and cystocentesis should not be performed by radiology without first being attempted by the clinician(s) on the case.** These procedures can be performed by internal medicine and other services without our assistance. In fact, these are important skills for internists to master. If the clinician on the case has attempted any of the above procedures without success, we are happy to help.
  - c. **MUST** obtain PT, PTT, and platelet count before core biopsies are obtained.
2. Sedation
  - a. Sedation is not usually needed for most fine-needle aspirates. The animals usually do well without it.
  - b. If the animal requires sedation, please do not use hydromorphone unless absolutely necessary. The panting associated with its use may compromise the exam and may make the procedure difficult or impossible.
  - c. General anesthesia is preferred for core biopsies so that these patients receive the necessary monitoring during and after the procedure.
  - d. Please consult the sonographer before sedation of patients scheduled for echocardiography.

## **CT**

1. Before a CT study is requested, the clinician on the case must speak to the radiologist/radiology resident prior to performing a CT. We can help decide the best field of view and best test for the patient.
  - a. If we are aware of the exam, we can be present and determine whether or not additional slices or a different plane should be obtained.
  - b. We also must be made aware of the time of the scan. If not, a radiologist may be unavailable to review the images.
2. If possible, please give 2-3 days advanced notice to radiology if a large animal CT is to be performed.
3. If contrast will be used for large animal CT scans, the contrast media must be ordered from the pharmacy in advance as radiology does not stock the large volume of contrast required for these studies.
4. All animals in which contrast is to be given **MUST** have an IV catheter placed **BEFORE** coming to CT.

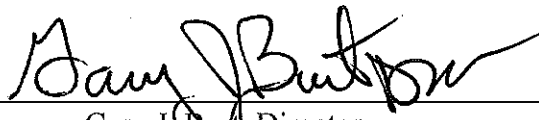
## **Fluoroscopy**

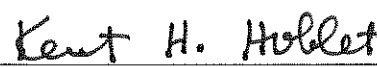
A radiologist or radiology resident must be consulted upon request of a fluoroscopic study. Some of these studies require preparation of the animal. We may request sedation or we may ask that there be no sedation on board, depending on the type of study to be performed. We would like to discuss the plan for the procedure with the clinician and coordinate the schedule so the clinician on the case is present. A radiologist or radiology house office must be present for fluoroscopy. This is a dynamic

study and is difficult to interpret accurately from saved images. Each radiologist interprets his or her own fluoroscopic studies.

### **Contrast Studies**

A radiologist or radiology resident must be consulted upon request of a contrast study. Some of these are time consuming procedures that may interfere with further diagnostics. Also, most contrast studies require patient preparation. If a procedure is commenced without consultation, there could be inappropriate time and money spent. We are trained to know which procedure is best for certain conditions. We can then discuss patient preparation and coordinate schedules. A radiologist or radiology house officer should be available at the beginning of a study and at the end to determine if further images are needed.

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Approved:  10/17/12  
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# College of Veterinary Medicine Policies and Procedures

Subject: Chemical Restraint

Section: Diagnostic Imaging

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## CHEMICAL RESTRAINT

Any animal that the technologist foresees as being difficult to position may require sedation, tranquilization, or general anesthesia. The assigned students may administer the drug(s) under the supervision of a technician or veterinarian. Advance chemical restraint will save time in the animals which are known to be difficult to handle.

For cases known to require sedation, the imaging request should not be submitted until the drugs have been acquired from pharmacy.

Sedation for ultrasound:

- Please do not use hydromorphone unless necessary as it causes excessive panting.
- Recommended protocols for sedation for echocardiography can be found on the bulletin board in the ultrasound room. Please consult with the sonographer before sedation for echocardiography.

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# College of Veterinary Medicine Policies and Procedures

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## RADIATION SAFETY

The guidelines for radiation safety will be strictly adhered to during all examinations and utilization of radiation equipment in the radiology section.

1. All persons present in the room during radiographic examinations must wear a radiation dosimeter (badge) outside their lead apron. Lead aprons and lead gloves must be worn by all animal handlers during a radiographic examination.
2. Individuals under the age of 18 and pregnant women are not permitted in the room during radiographic exposure.
3. Periodic safety checks and maintenance of all radiation equipment and radiation safety devices will be performed.
4. No one but authorized radiology personnel or trained students will operate the equipment in the radiology section during business hours. Trained students or authorized emergency duty personnel may operate designated equipment after hours.

The use of proper radiation procedures is not negotiable. If unprotected human digits or other human body parts are present on a radiograph taken by radiology students, all students involved will be considered responsible and additional assignments will be given. The assignment typically is a paper on some aspect of radiation safety. If radiation safety is breached and an additional assignment is made, the student's grade will not be released until the work is completed.

### Clients

- Clients are not allowed in the radiology suite.
  - Safety – The viewing area is usually a safe place, but we never know what sort of animal will be in there or if a client will inadvertently be irradiated in one of the radiology rooms.
  - Efficiency – Because we are here for the clients, we want to be as efficient as possible and make their visit to MSU as little less stressful; our goal is efficiency.
  - Client confidentiality
- Images may be reviewed with clients on the exam room computers or on the PACS work station in the equine area.
- If clients request a copy of their animal's images there will be a charge. Please ask the radiology staff for charge information.

