Review principles and content of **Communication/Patient Teaching**, including

- Claustrophobia, response to patient, give a call device, reassure
- Patient satisfaction, importance of communication
- Insulin-dependent diabetic patient, tissue heating may cause skin breakdown, observe skin routinely for a few days

Review principles of **infection prevention**, including

- Handwashing before and after each procedure
- Use of handwashing rather than disinfectant gel with patient who has C. diff

Review principles of basic **safety**, including

- Hazard to patients during MRI, tissue heating
- Hazard of ferromagnetic surgical clips, may twist to align with magnetic field
- Hazard to patients and personnel – ferromagnetic projectiles
- Patient identifiers

Review the patient **screening process**, including

- Cardiac pacemaker, contraindication for most patients
- Screening form to identify presence of ferromagnetic implants
- Need to complete form before each MRI image
- Study to detect metallic foreign bodies, plain film x-rays
- Lab test before contrast study = serum creatinine
- Patient states has implanted device in place, first ask for manufacturer’s card

Review correct actions in **patient conditions and situations** common in MRI settings, such as

- Brain exam, “Coil Failure” message, plug and replug the coil
- Claustrophobia, give call bell, encourage patient to close eyes
- Reaction to contrast agent, identify symptoms of allergic reaction, follow organization protocol
- Potential effect of a joint prosthesis, artifact and degrade image
- Venipuncture procedure, after palpating visible veins in arm to select vein, apply tourniquet
- Locating area of interest with vitamin E capsules or Beekley spots
- Insulin-dependent diabetic patient, tissue heating may cause skin breakdown
Review important aspects of **technical MRI knowledge**, such as

- Type of energy involved in MRI image, radio frequencies, 10 – 200 MHz
- Pulse sequence which includes TI, TR, and TE = inversion recovery
- Tissue characteristic represented by MRI image = hydrogen concentration
- STIR sequence suppresses signal from fat
- Size of gradient echo flip angle = less than 90 degrees
- Spin echo pulse sequence = TR 4000, TE 90
- T1 weighted image, typically short TR and short TE
- Appearance of CSF on T2-weighted MRI image = bright signal
- To correct aliasing or wrap-around, apply no phase wrap or oversampling technique
- Correct position of surface coil = perpendicular to the static magnetic field