Recent years have witnessed a substantial increase in the use of imaging and therapeutic radiology procedures. Contributing to this trend has included dramatic technologic advances, expanding applications in clinical medicine, improving economy, and increasing reliance on high technology.

Traditionally, imaging has been separated into two distinct areas: (1) functional, and (2) structural imaging. Applications of functional imaging includes nuclear medicine such as SPECT (single photon emission computed tomography) and PET (positron emission tomography), and MRS (magnetic resonance spectroscopy). Applications in structural (i.e., anatomical) imaging includes planar radiography, CT (x-ray computed tomography), and MRI (magnetic resonance imaging). Distinctions between these modalities and applications have begun to converge with the development of multi-modality (SPECT/CT, PET/CT) scanners.

Particularly in relation to veterinary medicine, advances in CT, MRI, and echocardiography are increasingly relevant. For example, CT is significantly more sensitive for detecting soft-tissue masses than thoracic radiographs. MRI can detect and reveal the presence and distribution of myocardial fat and thus help diagnosis and follow specific forms of heart muscle diseases. Improvements in basic echocardiographic instruments including off line data assessments have markedly expanded the utility of this modality. Furthermore, enhancements in three-dimensional echocardiographic imaging has now made this technique useful for evaluating certain acquired and congenital diseases. Moreover, quantitative tissue Doppler examinations including strain rate imaging can contribute to assessment of myocardial performance.

REFERENCES