

Abstract:

Radiation dose management for fluoroscopically- guided interventional medical procedures requires a combined effort from physicians, physicists and government regulators. Paramount to this process is an understanding of the benefits and risk for these procedures. For cardiovascular disease, despite the increasing prevalence in a setting of escalating risk factors, mortality has steadily decreased. Diagnostic and therapeutic fluoroscopic imaging has undoubtedly attributed to this as seen specifically in the areas of acute myocardial infarction, sudden cardiac arrest, and heart failure therapy. All facilities should have a radiation safety program as part of the institutional quality assurance umbrella with specific focuses on dose management as it applies to the equipment, physician, and patient. The regular interactions between the physicist and physician/staff assure proper equipment purchase and maintenance, initial and annual training, and patient dose assessment. The current challenges of the high risk patient require specific attention. As techniques and equipment advance, application of procedures expands and previously “untreatable” patients are approached. Patient factors such as morbid obesity, diabetes and repeat procedures are seen more as the norm rather than the exception. Complex anatomy in elderly, critically ill patients dictate challenging clinical decisions before, during, and after the procedure. This presentation will present a best practice approach to the challenges of benefit risk assessment in patients undergoing fluoroscopically-guided interventional procedures.