Tracking Radiation Exposure From Medical Diagnostic Procedures

2011 Gilbert W. Beebe Symposium

Session 1: National & International Efforts in volume and dose tracking
• Introduction F. Mettler
  
  • IAEA activities and overview of global activities M. Rehani
  
  • FDA’s past and present efforts M. Spelic
  
  • VHA Strategies C. Anderson
  
  • ACR Dose Index Registry R. Morin
  
  • Discussion 20 minutes
Why don’t we know more precisely what the exposure/dose from medical diagnostics is?
Issues

• Disparate and incomplete sources of volume and frequency data
• Machine and radionuclide injection activity variation
• Patient size and shape variation
• Machines that do not have a dose index
• Uncertainty about beam orientation
• Minimal recording of dose information
• Published information on actual doses is limited
Early FDA surveys discontinued
Major and minor volume and frequency data sources

- Commercial (IMV Benchmark) (60%)
- Medicare payment data (2003-2005) (~25%)
- VA Health Care System
- Claims data from large national employer plan
- State radiation programs
- Large hospitals
- American College of Radiology
- Literature
Limited periodic FDA dose surveys

Multiple Scan Average Dose

10-fold variation in CT scan doses
Unknown collimation
Exposure index
Linear or logarithmic?
Translation into exposure or dose?
Many fluoroscopy machines have no dose index
(90% at my hospital have none)
Nuclear medicine: only record of administered activity

Absorbed dose varies with patient size and disease
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• Discussion                                        20 minutes