FGR 14: Radiation Protection Guidance for Diagnostic and Interventional X-ray Procedures

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What is Federal Guidance?

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The Federal guidance function is to *"...advise the President on radiation matters, directly or indirectly affecting the public, including guidance for all Federal agencies in the formulation of radiation standards..."*

- Authority transferred from Federal Radiation Council to EPA Administrator in 1970
- President signs final guidance

EPA has used Federal Guidance to recommend

- New Limits for Uranium Workers (1970*)
- Revised General Standards for Workers (1987)
- Guidance on the Use of Diagnostic X-rays (1978)

Two Kinds of Federal Guidance

Presidential Guidance

- Radiation protection principles and policy recommendations to Federal agencies
- Signed by the President

Technical Reports

- Methodologies and coefficients for radiation dose and risk assessments
- Background information to support Presidential Guidance and standards

1976 FGR 9 Goals

Eliminate unnecessary/unproductive exams

- Supported by NCRP, ICRP, ACR

Produce improved diagnosis with minimal patient exposure

- Strong training, credentialing, better equipment
- Film overexposure provided ALARA incentive

New Guidance for Diagnostic X-rays

Non-binding guidance is targeted to use of medical/dental x-rays in federal facilities

Digital radiography, CT, and interventional fluoroscopy have added significantly to the average American's background radiation dose

Goal is to choose the appropriate imaging procedure and give the dose necessary for proper diagnosis – and no more!

Goals for FGR 14

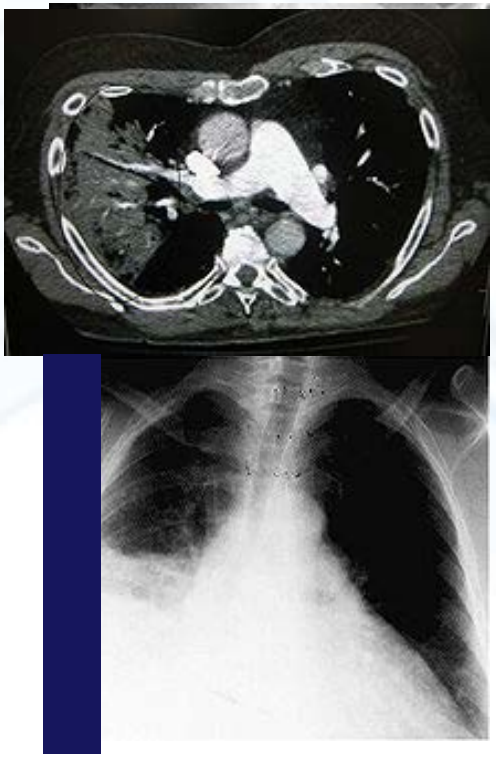
Address film and digital imaging

Extend scope

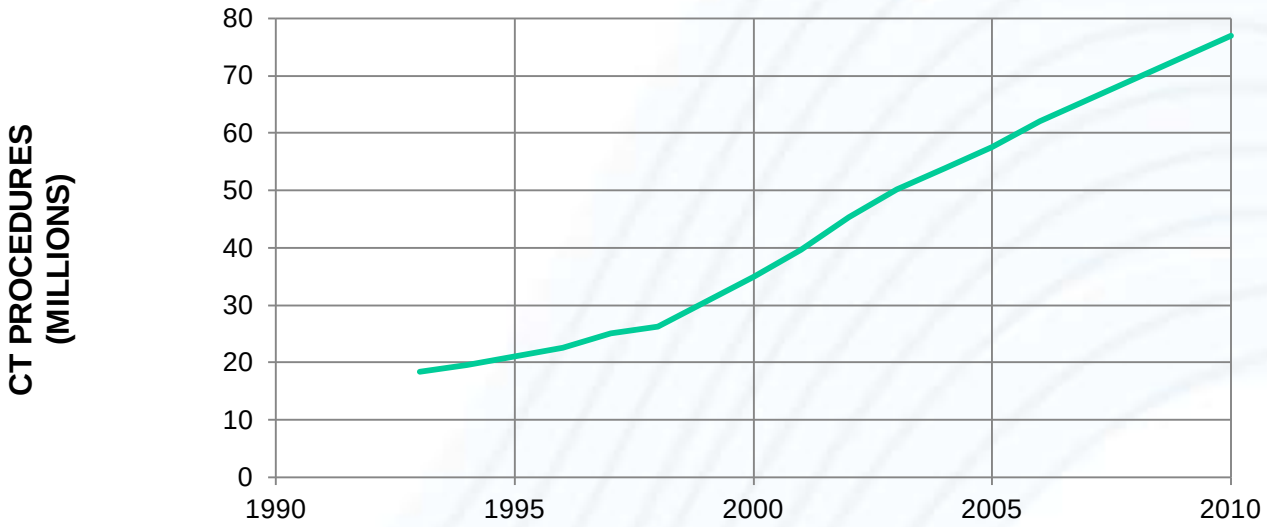
- Radiography, CT, interventional fluoroscopy, bone densitometry, dentistry, veterinary

Address

- Adequate image
- Optimization of dose, maximize benefit:risk
- Newer dose metrics
  - CTDI, DAP, DLP, KAP
- Hybrid modalities



of CT Procedures by Year



Proposed New Recommendations

REFERENCE LEVELS: Should be adopted as a non-regulatory approach for promoting good practice

- Allows a facility to compare itself against national average effective dose (or other metric) for common x-ray procedures (Sources can be NEXT data, ACR, NCRP, ICRP…)
- If the mean radiation dose at a facility exceeds the reference level, investigation is appropriate to potentially reduce radiation dose.

CHILDREN: Techniques and imaging protocols for children should be appropriate for their age, size, and weight.

TRAINING: Every person who operates or directs the operation of x-ray imaging equipment should be trained in the safe use of the equipment.

Proposed New Recommendations

TRAINING: Additional training is required for operators of fluoroscopy equipment where skin dose may exceed 2 Gy.

DOSE REDUCTION TECHNOLOGY: When purchasing x-ray imaging equipment, the additional cost of including dose-reduction technology is justified.

RECORD DOSE: Patient radiation dose data should be recorded in the patient's medical record.

INFORMED CONSENT: Informed consent and appropriate documentation shall be obtained prior to the initiation of any procedure that is likely to expose the patient to any significant risks and potential complications.

FGR 14 Available for Public Comment

Access to the document, FAQs, and information on submitting comments are on the web at

http://www.epa.gov/radiation/federal/fgr-14.html

Comments Accepted Through June 3

www.regulations.gov: Follow the online instructions for submitting comments.

Email: a-and-r-docket@epa.gov

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