A Regional Radiation Safety Program:
The experience of one healthcare system

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Outline

A quick introduction to our healthcare system

Review the components of the radiation safety program for a medical license and our regional approach

Additional resources for Radiation Safety Professionals

Questions and Answers

Kaiser Permanente – a national view

- 8 Regions
  - Hawaii
  - Washington
  - Northwest (Oregon/Washington)
  - Northern California
  - Southern California
  - Colorado
  - Mid-Atlantic
  - Georgia
The Southern California Region of Kaiser Permanente

- Three primary divisions:
  - Kaiser Foundation Hospitals
  - Kaiser Foundation Health Plan
  - Permanente Medical Groups
- 17 Hospitals
- 200 Medical Office Buildings
- 6,000 Physicians
- 1 Medical School opening in 2019
- Insuring approximately 4.4M in SCal

Medical Imaging Technology and Informatics

- Several functional groups
  - Applications Support
  - Equipment Support
  - Implementation and Optimization
  - Solutions and Strategy
  - Medical Physics and Radiation Safety
  - Department Support

Radiation Safety Program Requirements

Establish a Radiation Safety Program

- 10 CFR § 20.1101 (c) The licensee shall periodically (at least annually) review the radiation protection program content and implementation.
Regional Radiation Safety Program
For all materials sites in the region
- Each facility is reviewed semi-annually by the assigned medical physicist

Operating Safety and Emergency Procedures
Defined in a Regional Radiation Safety Manual
- Available online and used by all medical facilities within the region utilizing radioactive materials.

Radiation Safety Program Requirements
- 10 CFR § 36.53 The licensee shall have and follow written operating procedures for:
  - Operation of the irradiator
  - Use of personnel dosimeters
  - Leak testing of sources (every 6 months)
- The licensee shall have and follow emergency or abnormal event procedures for:
  - Personnel overexposures
  - A prolonged loss of electrical power
  - A fire alarm or explosion in the radiation room, etc.
Radiation Safety Program Requirements

Personnel Monitoring

- 10 CFR § 20.1502 Internal and external monitoring of occupational exposure to radiation is required for adults likely to receive, in 1 year from sources external to the body, a dose in excess of 10%.

Personnel Monitoring

Managed regionally

- Approximately 6500 dosimeters are utilized in Scal
- Regional staff coordinate with each facility to add, remove and update dosimeters
- All data are reviewed regionally
- All reports and return rates are posted on our department website for viewing at any time

Radiation Safety Program Requirements

Radiation Safety Committee

- 10 CFR § 35.24 (3)(F) Licensees that are authorized for two or more different types of uses of byproducts material shall establish a radiation safety committee to oversee all uses of byproduct material
Area Radiation Safety Committee

- A local radiation safety committee meets quarterly
- Responsibilities include:
  - Review and approval all new and renewal applications for human and non-human use
  - Monitor all users of ionizing radiation
  - Implement regional policies necessary to ensure compliance with applicable laws, regulations, conditions of RMLs and accepted principles of radiation safety
  - Review the local radiation dosimetry program on a regular basis

Members include:
- A physician representing radiology;
- A physician representing nuclear medicine;
- A physician representing radiation oncology (if applicable);
- A representative of medical center administration;
- Director from accreditation/regulation/licensing;
- Representative of nursing administration;
- Area medical health physicist;
- MRI safety officer;
- Regional RSO

For each medical area within the region

Regional Radiation Safety Committee

- Meets quarterly
- Responsibilities include:
  - Monitor all uses and users of ionizing radiation
  - Establish regional policies necessary to ensure compliance with applicable laws, regulations, conditions of RMLs and accepted principles of radiation safety
  - Review the radiation dosimetry program on a regular basis
  - Assigns/oversees the duties/responsibilities of the Regional RSO

Members include:
- A physician representing radiology and nuclear medicine;
- Regional director of diagnostic imaging services
- Regional director of MITI
- Regional RSO
- Medical Director of quality and clinical analysis

Radiation Safety Program Requirements

Records

- 10 CFR § 36.81 Defines records and retention periods
- Copy of the license, license conditions, documents incorporated into a license by reference, amendments until the license is terminated
- Evaluations of personnel dosimeters
- Records of radiation surveys and meter calibrations
- Leak test analysis, etc.
Records
For the entire region

- Largely located on our department website

Additional Resources

- NUREG-1556 Vol. 9
- ACR-AAPM RSO Resources
- IAEA Safety Standards

Summary

A Regional Radiation Safety Program is Efficient

- Core functions are consolidated to specific regional personnel to avoid duplication, create a uniform program, and minimize costs

Department and Organizational Structure Impact a Regional Program

- Our system is regionalized and our department provides comprehensive services in all areas of medical imaging
- We have excellent partnerships with physicians, administrators, and collaborating departments at the national, regional, and local level