Overview of a University and Affiliated Hospital Radiation Safety Program

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April 19, 2013
Agenda

• Georgia Regents University.
• Georgia Regents Health System.
• Radioactive materials/radiation – GRU.
• Radioactive materials/radiation – GRHS.
• State regulations and licensing.
• Institution roles and responsibilities.
• Organization of the Radiation Safety Office.
• Typical radiation safety tasks – university.
• Typical radiation safety tasks – health system.
• Challenges and current issues.
Georgia Regents University

A little math...

Georgia Health Sciences University
+ Augusta State University
= Georgia Regents University
Georgia Regents University

- 9000 students
- 523 medical and dental residents
- 1570 full and part time faculty
- 110 degree programs in 9 colleges
  - Medical College of Georgia (852 medical students)
  - College of Dental Medicine (311 dental students)
  - School of Nursing (587 nursing students)
  - Undergraduate - Summerville
- $75M/y sponsored research
Georgia Regents Health System

A little more math...

Georgia Regents Medical Center (478 beds)  
+ Children’s Hospital of Georgia (154 beds)  
+ Regional Trauma Center  
+ Georgia Regents Medical Associates  

= Georgia Regents Health System
Georgia Regents Enterprise

- Shared senior management.
- 9950 employees.
- 150 buildings.
- 650 acres.
- Valued at $1 billion.
• 107 Principal Authorized Users (research)

• Using
  - $^3$H
  - $^{14}$C
  - $^{35}$S
  - $^{32}$P
  - $^{125}$I
Georgia Regents University

- Two research irradiators.
- Lots of smaller sources.
- Two Dual Energy X-ray Absorptiometers (DEXA).
- 95 dental x-ray systems.
Georgia Regents Health System

• Nuclear Medicine
  – Diagnostic (primarily $^{99m}$Tc)
  – Therapeutic (primarily $^{131}$I)
  – PET/CT ($^{18}$F)

• Gamma Knife
  – 5000 Ci $^{60}$Co

• Georgia Radiation Therapy Center
  – $^{137}$Cs sources for low dose rate brachytherapy
  – $^{192}$Ir High Dose Rate Afterloader (10 Ci)
Additional Responsibilities

- University Hospital
  - Therapy in-patients – $^{131}$I, $^{137}$Cs
- Georgia Correctional Health Care
  - 44 dental and diagnostic x-ray systems
Framework

• Regulatory
  – Radioactive Materials: GA 391-3-17
  – X-rays: GA 290-5-22
  – Security: Nuclear Regulatory Commission (10 CFR 37)

• Non-regulatory
  – Joint Commission
  – Research sponsors
Internal Framework

Radiation Safety Committee

Authorized Users of Radioactive Material

Radiation Safety Officer and Staff
Organization

Environmental Health and Safety Division

- Biological Safety
- Radiation Safety
- Chemical Safety
- Fire Safety

- EHS Coordinator
- EHS Admin

Environmental Health/Occupational Safety
Radiation Safety Officer

Deputy Radiation Safety Officer

Assistant RSO - Lead Technologist
Office Associate - Dosimetry Coordinator

Hospital
- 2 technologists
  - GRMC
  - CHG
  - GRTC
  - UH

Campus
- 3 technologists
  - Health Sciences
  - Summerville
  - Radioactive Waste
  - Training Management
  - Program Documentation

GCHC
- 1 technologist
  - EHS Audits
  - X-ray surveys
Funding

Radiation Safety

University Hospital

GR Health

Georgia Correctional Health Care
Typical Radiation Safety Tasks - GRU

• Radiation/contamination surveys.
• Radiation safety training.
• Personnel dosimetry.
• Radioactive waste management.
• Package receipts.
• Radiation Safety Committee.
• X-ray system surveys.
• Research protocol review.
Typical Radiation Safety Tasks - GRMC

• Radiation/contamination surveys.
• Radiation safety training.
• Personnel dosimetry.
• Radioactive waste management.
• Package receipts.
• Radiation Safety Committee.
• Research protocol review.
Inpatient Radiation Therapy
\textbf{131I Thyroid Ablation}

- Room preparation.
- Patient monitoring and release.
- Patient counseling.
- Room decontamination/release.
Inpatient Brachytherapy

- Sealed $^{137}\text{Cs}$ sources.
- Source transport and accountability.
- Room survey.
- Patient surveys and release.
Increased Controls
10 CFR 37

• Sources of concern.
• Enhanced security.
• Trustworthy and Reliable.
  – Fingerprinting.
  – FBI background check.
  – References.
  – Approvals.
Radiation Safety Program Challenges

- Budget ↓ Workload ↑
- University environment.
- Health care environment.
Current Issues

- Smart Compliance.
- Technology.
- Laser Safety Program.
In Summary

• Who we are.
• How we are regulated.
• How we are organized and funded.
• Our radiation sources and uses.
• What we do.
• Our challenges and issues.
"That's all folks!"

Questions?