

Conference of Radiation Control Program Directors

CRCPD UPDATE

JENNIFER ELEE

CRCPD COMMITTEE CHAIR FOR MEDICAL EVENTS

LIAISON TO AAPM



Who is CRCPD and where do we fit in?

Conference of Radiation Control Program Directors

- Membership of state radiation workers from all 50 states
- Affiliate members with an interest in radiation protection

Interact with Federal Agencies

- NRC, EPA, FDA, DHH, DOE, CDC

International Groups

- IAEA, IRPA

Scientific and Professional Organization Associations

- **AAPM**, ACR, ASTRO, NCRP, HPS



What is CRCPD Doing-CRCPD Liaison to AAPM

CRCPD Booth at Annual Meeting / registration of regulators

CRCPDs committee meeting with EXCOM

Government and Regulatory Affairs Committee (GRAC)

Regional Organization (RO) committee

Chapter Officers breakfast

Spring Clinical Meeting presentation

WGIEC - Working Group on IEC Coordination

Task Group No. 288 - Consensus Recommendations - for Incident Narrative Formatting



What is CRCPD Doing-Registry of Qualified Medical Physicists (QMP)

In 2011, CRCPD entered into a Memorandum of Understanding with AAPM to develop and maintain a Qualified Medical Physicist Registry (QMP Registry). Since that time, the QMP Registry has served as a central location to confirm the qualifications of board certified medical physicists. This QMP Registry provides independent verification to state radiation control program staff and employers of written documentation presented with applications for employment or to the radiation control program upon application for a radioactive material license or machine license or registration.

Promoted at CRCPD booth at AAPM Annual Meetings.

What is CRCPD Doing-AAPM Liaisons to CRCPD 2019



Bette W. Blankenship, MS



Mary F. Fox, MS



Melissa C. Martin, MS
RPAC



Kathleen M. Hintenlang, PhD
CHAIR



Jessica B. Clements, MS



A. Kyle Jones, PhD



Richard J. Martin, JD

Provide training at CRCPD Annual Meeting

What is CRCPD Doing-AAPM

Resources to CRCPD Work Groups

WG #	WG Name	AAPM Resource	WG #	WG Name	AAPM Resource
E-34	Committee for Unwanted Radioactive Materials and Coordinator/Liaison – Institute of Scrap Recycling Industries, Inc. (ISRI)	Bette Blankenship Kevin Nelson	H-45	Task Force on Cutaneous Electronic Brachytherapy or CeBT	Zoubir Ouhib
H-4	Committee on Nationwide Evaluation of X-Ray Trends (NEXT)	A. Kyle Jones	H-46	Committee on IEC Standards	Mark Supanich
H-7	Committee on Diagnostic X-Ray (QA)	Mahadevappa Mahesh David Hintenlang	H-47	Committee on Nuclear Medicine	Jessica Clements Robert Pooley
H-11	Committee on Mammography	Tyler Fisher Doug Pfeiffer Thomas Ruckdeschel	H-48	Committee on Radiation Therapy	Richard Martin
H-32	Committee on Computed Tomography	David Hintenlang Thomas Ruckdeschel	H-50	Liaison-American Association of Physicists in Medicine (AAPM)	Melissa Martin Kate Hintenlang Richard Martin – staff
H-38	Committee on Radiation Medical Events	Kevin Little – diagnostic Kate Hintenlang-therapy	H-55	Task force on Digital Imaging	Robert Uzenoff Mary Ellen Jafari A. Kyle Jones Jessica Clements
H-39	Task Force on CT Brain Perfusion Exposure Survey	Doug Pfeiffer David Hintenlang	H-56	Task force on Medical Hand Held X-ray devices	Melissa Martin Joel Gray Bryon Murray
H-42	Task Force on Proton Therapy	Melissa Martin Kate Hintenlang Jason Shen	SR-B	Suggested Regulations - B: Registration of Radiation Machines, Facilities, and Services (Part B)	Bette Blankenship Kevin Nelson
H-43	Task Force on Consistency of Application of Release Criteria for Iodine Therapy	Jessica Clements	SR-G	Suggested Regulations - G: Use of Radionuclides in the Healing Arts (Part G)	Jessica Clements
H-44	Task Force on Cone Beam CT	Joel Gray William DeForrest	SR-X	Suggested Regulations – X: Medical Therapy (Part X)	Melissa Martin Kate Hintenlang
			SR-Z	Suggested Regulations – Z: Medical Credentialing (Part Z)	Melissa Martin Per Halvorsen Jessica Clements

What is CRCPD Doing-Committee Work

H-7 Committee on Diagnostic X-Ray hosts monthly calls for states to discuss issues

H-4 Committee on the National Evaluation of X-ray Trends continues to play an important role in providing National Data and training for inspectors (Dental Next Study 2014-2016, upcoming Chiropractic Study 2018-2019)

H-56 Committee on IEC Standards continues to work with the FDA and other organizations to facilitate the FDA's use of IEC standards and to add input on standards up for review (Dental)

H42 Task Force on Proton Therapy guidance for state regulatory personnel & IAEA

What has CRCPD Done-Committee Work

Liaisons and board members have attended and presented at meetings for AAPM, NCRP, HPS, OAS, ACMUI

White papers published on CT, CR/DR, Dental Cone Beam CT, and on IMRT Therapy for inspectors, updated Bone Density paper

Currently working on guidance for Digital Imaging Quality Control and Hand Held X-Ray Devices for state regulatory personnel

Working with IAEA to produce a guide for evaluation of new equipment both diagnostic and therapy for regulatory use

What is CRCPD Doing- Medical Events

- ▶ CRCPD has developed a list of state reporting contacts which is available on the CRCPD website and has been shared with AAPM and ASTRO

https://www.aapm.org/government_affairs/licensure/default.asp

- ▶ Works to Disseminate information with others
 - ▶ In collaboration with AAPM, presents an annual medical event summary at the CRCPD annual National Conference on Radiation Control and presents at AAPM Spring Clinical Meetings
 - ▶ Participates in national and international meetings on medical events reporting for therapy, diagnostic, machine and material related events (IAEA, ACMUI)
- ▶ Promotes reporting of events **by facilities to states** and subsequent reporting of events **by states to CRCPD** for more complete data
 - ▶ Continue to remind states to report events at the CRCPD monthly conference calls
 - ▶ Annual Summary articles in the CRCPD Newsbrief
 - ▶ Hosted a special interest meeting in 2018 on Incident Learning and Safety Culture

Medical Event Reporting – Success Story

2011: Pilot conducted; CRCPD collected machine events for first time.

2011-present: Collecting events from all states with requirements

Some states have no reporting requirements, 35 states have therapy reporting, 22 states have diagnostic reporting (CRCPD survey, 2017)

In 2013, CRCPD entered into a Memorandum of Understanding with AAPM to further review the data (facility/state information is redacted).

AAPM provides an annual report to the CRCPD Board and presents a summary at the CRCPD Annual Meeting

Event Definitions:

Current Definitions include events resulting from the use of Therapeutic Radiation Machines and from Diagnostic Radiation Machines.

Definition was included in latest version of CRCPD Suggested State Regulations for Diagnostic X-Ray (Part F)

CRCPD Suggested State Regulations for Therapy (Part X) is currently being rewritten

2018 Events Reported

Annual summary: fiscal year 10/1/17-9/30/18

27 Therapy Events

0 Diagnostic Events

13 States Reporting

Interesting reports for 2018

Superficial
Therapy Events

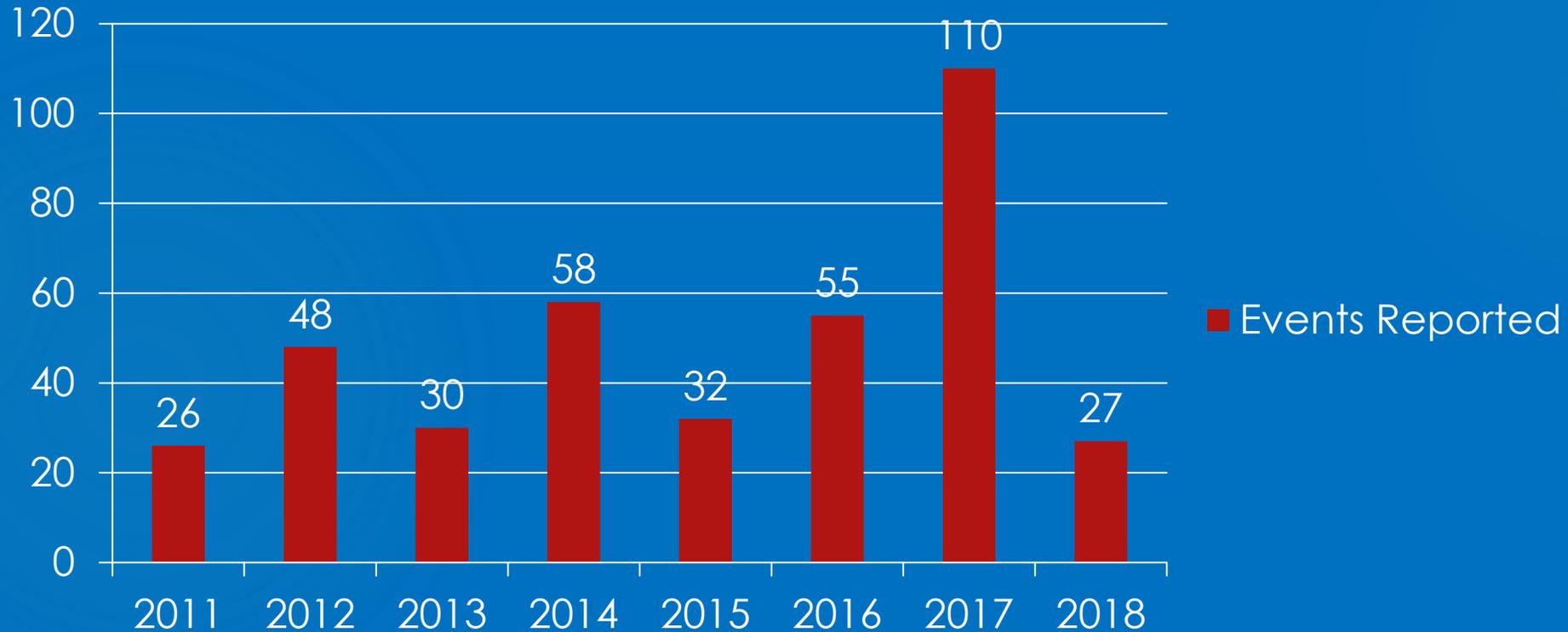
Cyberknife

Wrong Diagnosis

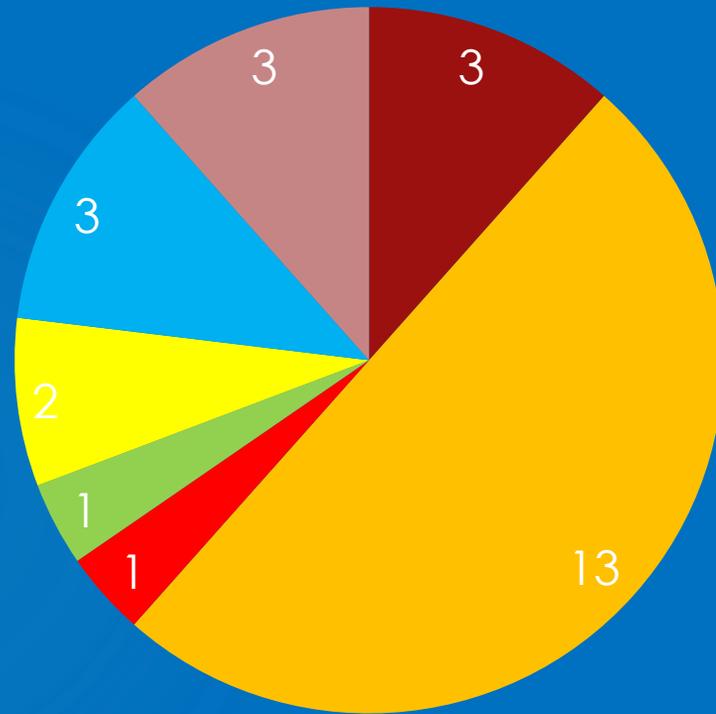
“Covering”
Physician

Comparison 2011-2018

Events Reported

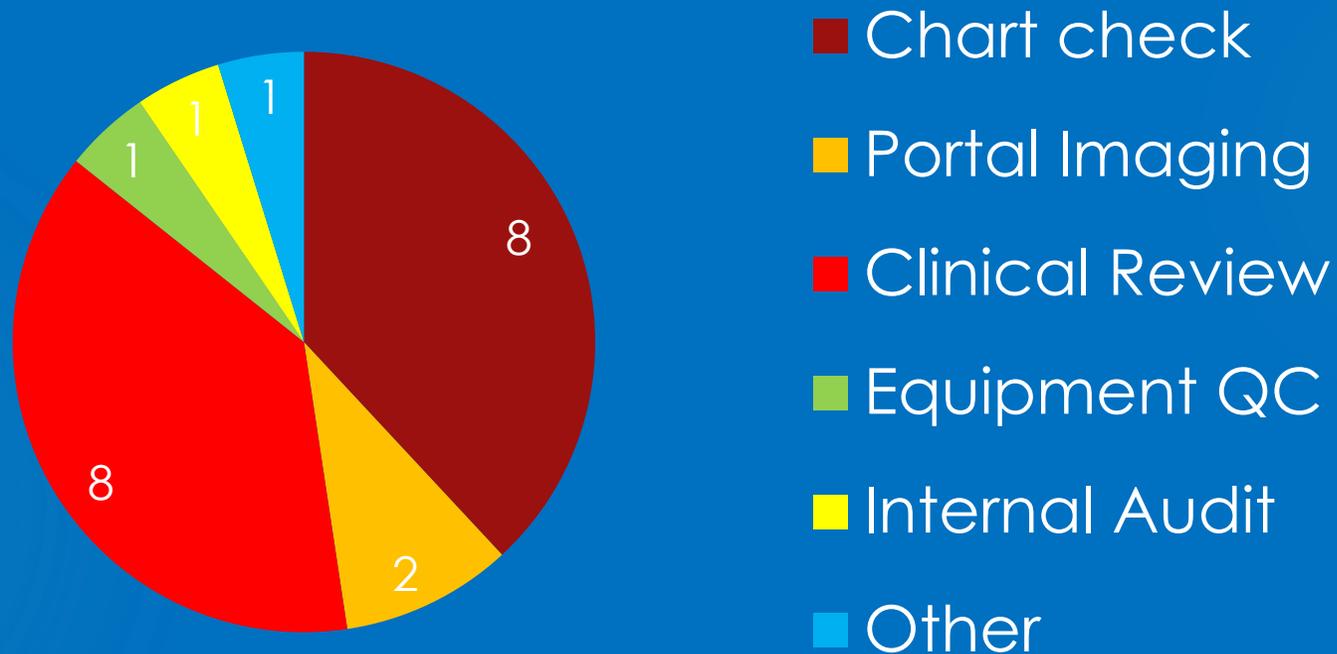


2018 Therapy Summary

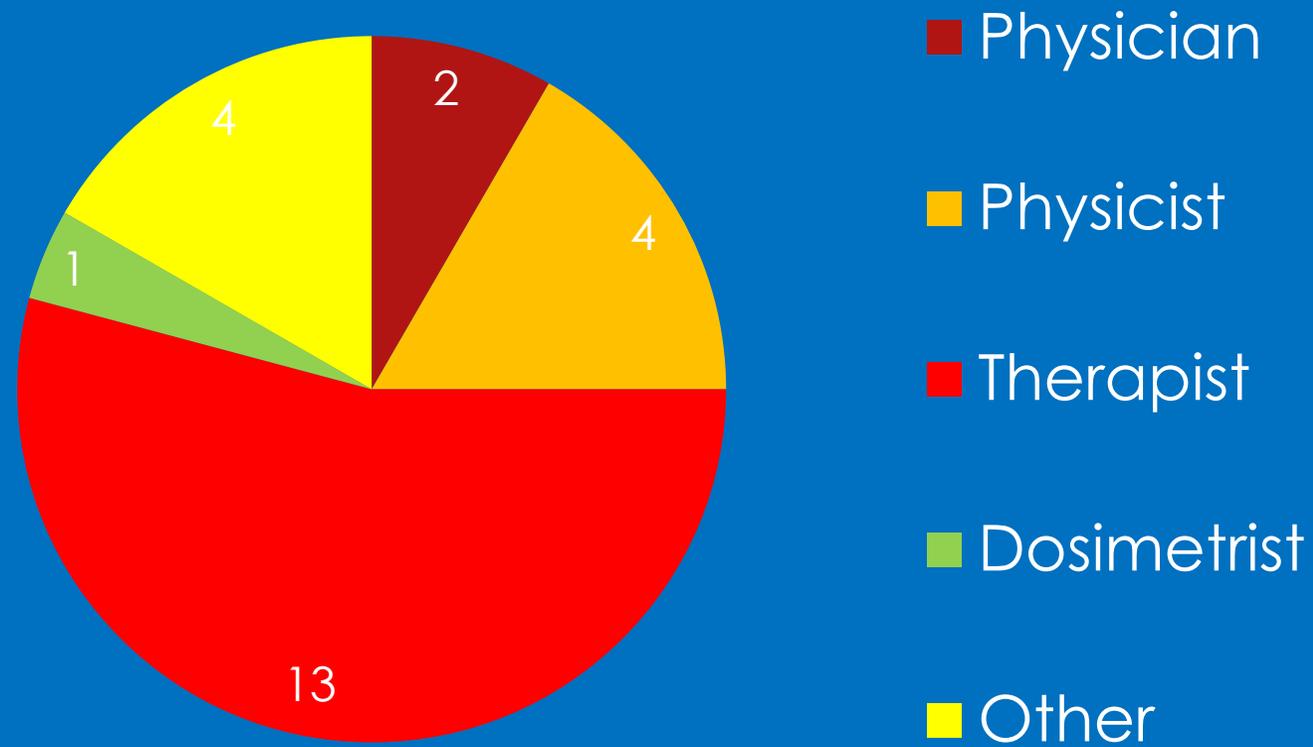


- Wrong Patient
- Wrong Site
- Weekly >30%
- Total >20%
- Single >50%
- Unintended
- other

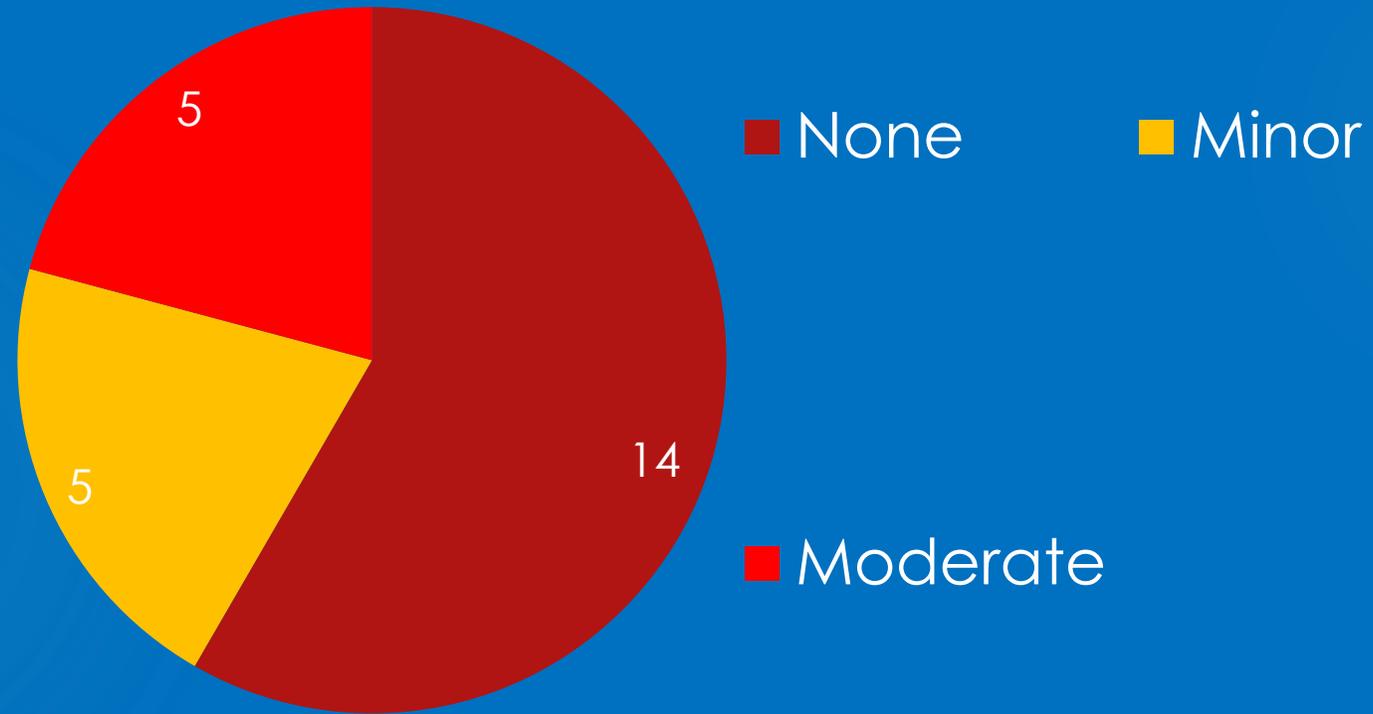
How events were discovered



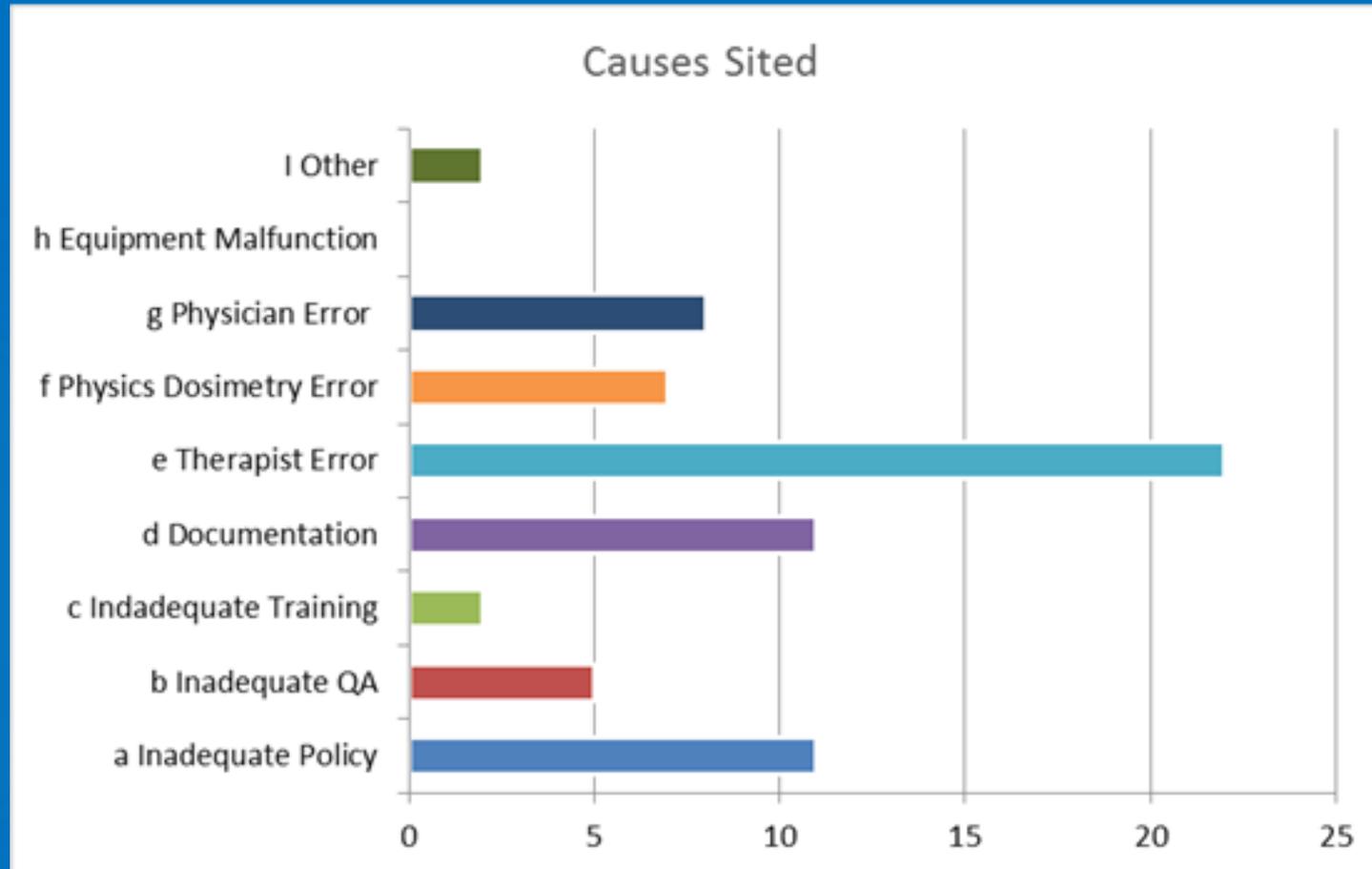
Who discovered the event



Severity of Event



Causes/Contributing Factors of Events



Events:

- ▶ Event:
 - ▶ Patient undergoing radiation therapy treated with 12 fractions for two week period while pregnant. Patient did not declare pregnancy until after treatment had begun. Patient was counseled prior to treatment of pregnancy risks. **Patient was not pregnant when treatment began.**
- ▶ Corrective Action:
 - ▶ Corrective actions by facility include verification of pregnancy upon each therapy appointment throughout treatment period.

Events:

▶ Event

- ▶ The treatment room was set up and treatment plan loaded onto the computer system for prostate patient A, who had not shown up for his appointment yet. In the meantime, the next scheduled patient (B), who was also a prostate patient, came in early for his appointment. Patient B was prepped for his treatment and escorted into the treatment room. He was then set up for treatment like normal and the two therapists proceeded to treat the patient. When therapist 1 went into the room to retrieve the patient once treatment was complete, **patient B stated that he recognized a difference with this treatment compared to prior treatments.** At that time therapist 1 looked up at the patient information screen and realized that patient B had been treated with patient A's information and prescribed treatment plan.

▶ Corrective Action

- ▶ • Review the existing “time out” policy and procedures with the therapists.
- ▶ • The “time-out” procedure must be correctly followed for every patient and shall be performed any time a patient crosses the threshold of the treatment room door.
- ▶ • Patient face photo needs to be referenced and confirmed before treating a patient.

Events:

- ▶ Event:

- ▶ The dosimetrist reviewed the images from the scan and labeled the structures. The dosimetrist pulled up the patient information in the computer for the "covering physician." The simulation sheet (filled out by the original radiation oncologist) including intent was of treating the right breast was given to the "covering physician" so that volumes could be completed. Left (incorrect) breast nipple volume was drawn by the "covering physician" instead of the right breast lumpectomy site. The simulation sheet was signed by "covering physician." The error of drawing the left (incorrect) volume triggered the wrong site treatment plan and treatment. The dosimetrist developed a treatment plan for radiation therapy based on the incorrect volume drawing. The dosimetrist, physician and physicist were notified. The patient was taken to the exam area where the original Radiation Oncologist reviewed the findings with the patient including the number of treatments that were delivered to the left breast.

- ▶ Corrective Action

- ▶ Procedure amended to lock registration prior to hand-off
- ▶ Implement hands-on training for all team members involved in on-line image registration
- ▶ Update procedure to include assessment of the patient position in the final treatment position

Events:

- ▶ Event:
 - ▶ Two patients completed fractionated treatment of breast cancer. Shortly after completion of treatment, errors in the original pathology studies were discovered via internal audit-neither patient had cancer
- ▶ Corrective Action:
 - ▶ The pathologist was terminated and both patients were counseled.

Events:

- ▶ Event:

- ▶ Superficial radiation therapy at Dermatology office. 3,450 cGy to both intended and unintended areas out of total 4,600 cGy prescribed dose. A patient that was receiving superficial radiation therapy for the treatment of skin cancer was treated (1) outside the intended treatment volume for skin that exceeds 20% of the prescribed dose for the intended target volume and (2) with the total dose delivered to the treatment site identified in a written directive that differed from the total prescribed dose by more than 20%. Initially each treatment was positioned based on the surgical markings. As they faded the treatment site was lined up with the demarcations that appeared on the patient after several treatments. The physicians were not confirming the site markings prior to treatment set up.

- ▶ Corrective Action:

- ▶ The doctors will now verify site and markings prior to each treatment

Why Collect Event Information

Share lessons learned

Prevent errors

Look for trends

Improve patient care and safety

Contact information

www.crcpd.org

Jennifer Elee

- Jennifer.elee@la.gov
- 318-362-5367

